

Making Hand-Made Soaps

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<http://www.soap-lotion-recipes>

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CHAPTER 1

What's So Special About Handmade Soap?

Several years ago, at an outdoor craft fair, I bought my first bar of handmade soap. It was a goat's milk soap, tan in color, nothing special to look at, but possessing a heavenly smell, with both lavender and vanilla scents. I couldn't wait to get home and try it out. It lathered beautifully, and was very mild. I loved it and I used it exclusively for baths and showers, ignoring all the "store bought" soaps in my bathroom. After a couple of weeks, I noticed that my skin seemed softer and less dry. I hadn't changed anything else in my skincare routine, so it had to be the soap that brought about the change. Being an avid do-it-yourselfer and crafter, it wasn't long before I started thinking about making my own soaps.

I began by reading every book I could get my hands on. The first one that I read described the process of rendering fat to make tallow (from beef) or lard (from pig fat). The lye solution used was made using wood ashes. I wasn't really interested in doing all of that. So I kept reading.

I decided that melt and pour soap sounded like the easiest way to begin. I bought a few pounds of M&P soap base from a local craft shop and got very creative with it. I made a few soaps using embedded "goodies". I experimented with adding colorants, then with layering different colors of soap to make a multi-colored bar, and I even tried swirling. I made some very pretty soaps. But, as usual I wasn't satisfied and I wanted more. The M&P soaps were pretty, but they weren't soothing to my skin like the original bar of handmade soap that I purchased. In fact, they were somewhat drying. I added extra oils, herbs, and fragrances to the M&P soaps, not always with good results. I felt that I had done as much as I could do with a purchased base and I came to the conclusion that it was time to make my own.

I learned that soap-making has come along way from the days of our grandmother's harsh lye soap made from wood ashes and whatever grease and fats she had handy. Today we have lye that is easily available to us and reliable in quality. We can easily obtain lard from our local grocer, as well as many of the other oils that we use in soap-making. I bought the necessary supplies and tried making "cold process" soaps, but my impatience to use the soaps that I made led me to move on to "hot process" soaps that could be used more quickly. Both the hot and cold process soaps were mild and good to my skin, much better than the melt and pour that I had tried. Some of the recipes that I tried were better than others. I began to learn about the qualities of different oils, whether they produced a hard bar or a soft bar, lots of lather or very little, and whether they were moisturizing to the skin or drying to the skin. I started to develop my own recipes using various combinations of oils. Some were wonderful, while others were not quite as desirable. In the process I have learned a lot. It has been a most enjoyable learning process and it is ongoing.

During my research, I learned that many of the products on the market today that we think of as soap are not really soap! Take a close look the next time you're at the local super center. You'll notice that many of them do not have soap in the name. Instead, they are called beauty bars, or cleansing bars, or deodorant bars. They are made from synthetic detergents. True soap is made from a base (oils) and an alkali (lye). When the oils are mixed with the lye they go through a process called saponification and they produce soap and glycerin. Most commercial soap-makers remove the glycerin from the soap and either sell it for use in manufacturing processes such as making nitroglycerin, or if they are cosmetic companies, they may add it to their pricier products such as lotions. Glycerin is used in many different products, including marshmallows (to keep them soft), and by crafters to preserve flowers and leaves. Glycerin is a natural humectant, meaning that it attracts moisture. Handmade soaps retain their natural glycerin.

CHAPTER 2

Basic Soapmaking Techniques

There are four basic ways to make soap. One of the easiest is the "melt and pour" technique. Another method that allows you to make soap and be creative without having to use lye is called hand-milling or re-batching. The other two basic methods are the cold process method and the hot process method. There are many variations on each of these methods, such as cold process/oven process and crock-pot hot process. In this e-book, we will discuss the basic methods and touch briefly on a few variations.

Melt and Pour

Many soapmakers have started out with melt and pour and become "hooked"! There are many different brands of melt and pour soap bases on the market. Some are of higher quality than others. For the most part, those found in your chain-type craft stores are not the highest quality. Please refer to our appendix for a variety of sources for melt and pour bases. If, like me, you find that the first soaps you make lack the qualities that you had hoped for, do not give up. Try a different brand. Melt and pour bases can vary dramatically in quality.

Equipment & Supplies For Melt & Pour

- Melt and Pour Soap Base
- Double Boiler (Stainless Steel or heat-proof glass, NOT Aluminum)
- Mixing Bowls in various sizes Stainless Steel or heat-proof glass, NOT Aluminum)
- Measuring Spoons
- Heatproof Spoon for mixing (Stainless Steel NOT Aluminum)
- Fragrance (optional)
- Colorants (optional)
- Additives, such as herbs, etc; (optional)
- Soap Molds

- Vegetable Spray (like Pam) (optional)
- Rubbing alcohol or witch hazel in a spray bottle

Begin by pre-measuring all of the additives called for in the recipe into individual containers. Set them aside. Grate your soap base or cut into small cubes if your soap base did not come already grated or cubed. Add water to the bottom pan of your double boiler and slowly heat your melt and pour soap base. Stir frequently, yet gently, to help dissolve any chunks that remain. Vigorous stirring may cause air bubbles in your finished soaps. Keep the pot covered when you are not actively stirring. This will help to reduce water loss.

Remember, heat slowly. The melt-point for most M&P soap is around 140 degrees Fahrenheit. If you go too much above that temperature the soap will burn. You do not want to scorch or burn your soap. When the melt and pour base is completely melted, remove from heat.

A Brief Note About Melting M&P in the Microwave

This is not a favorite of mine because it is so easy to overheat your soap base, but I do want to touch briefly on it because I want this book to be a comprehensive resource. If you decide to melt your soap base in the microwave, first cut your soap base into small chunks. Place in a microwave-safe bowl and microwave at half power in 30-second intervals, stirring gently in between intervals, until completely melted. The goal is to melt it without overheating it.

Now add your pre-measured fragrance. You can add either essential oils or fragrance oils or even a blend of the two. Stir well, mix in any other additives that your recipe calls for, and stir some more. When all ingredients are well mixed, lightly spray your soap molds with vegetable spray (I prefer misting with olive oil but many people use PAM), and pour your soap slowly into the mold. If a few bubbles rise to the top of the soap, don't worry. Just spray them lightly with alcohol and watch them disappear!

Important Note: When you purchase your fragrance oils, the manufacturer should tell you the flashpoint of that FO or EO. The flashpoint of an essential oil or fragrance oil is the lowest temperature at which the scent vaporizes. Always know the flashpoint of the fragrance oil that you are working with. If the temperature of the soap base is too high, your fragrance oil or essential oil may vaporize and you may be left with little or no scent. If you have heated your soap base slowly on low heat as directed it should not be too hot.

You can be as creative as you want with melt and pour soaps. Specialty soap molds for M&P soaps are readily available in a wide variety of designs, and they are generally inexpensive. Even without specialty molds, it is quite easy to get creative by embedding

small objects in the soap, using additives like herbs, dried flowers, and colorants to your soap. Don't be afraid to experiment. If you want to learn more about m&p soap and see some very artistic soaps, be sure to visit <http://www.pjsoaps.com> and <http://www.soapylove.com>. Paula from PJ soaps offers a lien of colorants and soap paints designed especially for M&P soapers. Debbie of SoapyLove is the author of Let's Get Soapy, a quarterly publication for M&P soap crafters complete with projects, supply lists, and sources for those supplies.

Hand-milling/Re-batching

Re-batching (sometimes called hand-milling) is the process of using existing soap, melting it down again, and re-molding it. Many people like re-batching because it allows you to make a great customized bar of soap without having to work with lye. When you re-batch soap, you can add delicate fragrance oils and essential oils and other additives such as powdered milk, powdered oatmeal, herbs, and colorants that would not hold up when exposed to lye during the soap-making process. You can use your own handmade soap that you have grated or shredded with a cheese grater, a Salad Shooter, or a food processor. You could use a bar of purchased unscented soap but it would be much better if you used handmade soap. Many soap-makers save end pieces and other leftover soap slivers of their handmade soap to re-batch. Grate it as finely as possible. If you would prefer, you can purchase cold process soap that is already shredded for your convenience. Check the appendix for sources if you would like to go that route.

Basic Equipment & Supplies for Rebatching/Handmilling

- Handmade soap for grating (or an unscented commercial bar or purchased soap shreds)
- Distilled Water
- Cheese grater or a salad shooter
- Double Boiler or optional crock-pot
- Mixing Bowls in various sizes
- Heatproof Spoon
- Fragrance (optional)
- Colorants (optional)
- Additives, such as herbs, etc; (optional)
- Soap Molds
- Vegetable Spray (like Pam) (optional)
- Rubbing alcohol in a spray bottle

Place your shredded soap into a double boiler. Add a small amount of distilled water or the liquid that is called for in your recipe. Stir well, being sure to thoroughly wet the grated soap. If you are using water, make sure that it is distilled water. Water from your faucet may contain minerals such as lime, or iron that will result in your soap not turning out properly. This is of particular importance if you use well water and are in an area known for "hard water". Distilled water can be purchased inexpensively from your local

grocery store. If you are re-batching a soap made with all vegetable oils, we recommend using milk rather than water. You can use any kind of milk, (goat milk, regular milk, canned or fresh), but whatever type you choose, it should be very cold. Starting with cold liquid and using very low heat will help prevent scorching the soap.

The amount of liquid that you will need to use depends largely upon the age of the soap that you are re-batching. If you are using a fresh batch of soap to re-batch, you will need less liquid than you will when using soap that is more than a week or two old. You should use approximately 8 ounces of liquid per pound of grated soap. You may use less if the soap is less than a week old.

Combine your soap and liquid in your double boiler or crock-pot. and cook on very low heat for 1 to 2 hours. You must melt your soap base very slowly. Do not try to melt it over direct heat. You may end up scorching it. If you do scorch it, it will have a foul smell and will probably be unsalvageable.

Note: If your soap is more than a week old, put your liquid and your shredded soap in a container that can be covered and left to soak over night. Your shredded soap will be much easier to melt the following day.

Make sure you stir the mixture, thoroughly wetting the grated soap when you start cooking. Continue to stir every 10-15 minutes, remembering to scrape the soap off the sides of the pot while stirring. Cover the mixture when you are not actively stirring. Repeat the process until the soap has melted completely, and has smoothed out. If the soap begins to scorch, remove the pan from heat, and replace the water in the bottom of the double boiler with cold water. Put back on low heat and stir frequently. If your soap is too thick, add a little more of the liquid called for in the recipe that you are using. If the soap is too thin just cook it a little longer (uncovered) and it will thicken up. Remember, you don't need a lot of liquid when re-batching soap if you do it correctly on very low, indirect heat.

Allow the mixture to cool for awhile before adding scents, herbs, and colorants. As mentioned in the previous section concerning M&P soaps, be aware of the flash point of the fragrance oil or essential oil that you are working with. Be sure that the soap has cooled below the flash point or your scent may vaporize and fade away. After your scents, colorants, and other additives have been mixed into the soap, pour the soap into your mold. Cover your mold and allow it to sit for about 48 hours. Un-mold, then store in a dry place for a couple of weeks to allow excess moisture to evaporate so the bars will harden and last longer.

Note: You may want to lightly coat your mold with some type of oil before pouring the soap. Many people like to use a spray like Pam, but I prefer to use a mister and spray olive oil lightly in the mold. This will make it easier for the soap to be released from the mold. If you still have trouble un-molding the soap, it probably isn't ready. Wait a little longer and allow it to dry a little more before trying to un-mold. You could place

the mold in the freezer for a while, and try to release but it's best to be patient ☺.

Cold Process Soapmaking

Using cold process soap-making methods, you can produce smooth, elegant soaps that that are truly good for your skin. Many people prefer the instant gratification of “hot Process” soap today but a hot process bar will never be quite as smooth and beautiful as a cold process bar can be.

Equipment & Supplies for Cold Process

- Lye
- Oils, in types and amounts called for in recipe
- Digital scales
- Stainless Steel Pot for melting oils, Double Boiler Type is preferred.
- Stainless steel or glass mixing bowls in various sizes
- Measuring Spoons (stainless steel or heavy duty plastic)
- Large heavy duty glass measuring cups
- Stainless steel mixing spoon
- Long Heavy Duty Gloves (the playtex type is fine)
- Goggles (to protect your eyes)
- Face mask (so you don't breathe in the fumes from the lye)
- Stick Blender (optional)
- Fragrance (optional)
- Colorants (optional)
- Additives, such as herbs, etc; (optional)
- Soap Molds
- Vegetable Spray (like Pam) (optional)
- Vinegar in a spray bottle

Begin by pre-measuring all of your ingredients. Digital scales with a tare feature will allow you to place the container on the scale then press a button to set the weight back to zero. Now you can weigh your ingredients as called for in the recipe. **ALWAYS WEIGH YOUR INGREDIENTS VERY CAREFULLY!** I cannot stress the importance of accurate measuring enough. Do not combine ingredients at this point. Simply weigh each ingredient out separately and set aside so they will be ready for use when needed.

Prepare your molds, either by lining them with wax paper if wooden, or spraying lightly with Pam or olive oil if they are plastic. If they are plastic be sure that they are heavy-duty, very thick plastic and/or that they are certified as being safe for cold process soap-making. Most of the melt and pour type molds available in hobby and craft shops will not stand up to the lye in the cold process soap. Be sure that your mold, your mixing bowls, your spoons, and your cook pots are not aluminum. Lye should never come in contact with aluminum. Measure your water into a heat proof non-aluminum container.

When working with lye, be very careful and follow safety procedures such as wearing heavy duty gloves, and wearing goggles for eye protection. Be sure that you have adequate ventilation in your work area. The lye gives off very strong fumes when mixed with the water. As you measure your lye flakes, be aware that a stray flake on the counter top or on the floor can be a safety hazard. Make sure that there are no children or pets in the area and that you will not be interrupted while working with lye. When you are finished with the soap-making process, it is a good idea to spray down your countertops with vinegar and to clean them thoroughly as well as mopping your floors with a bit of vinegar in the water.

Pour your pre-measured water (or other liquid as called for in recipe) into a stainless steel or heat-proof bowl that is large enough for mixing the lye and water. It is a good idea to mix the lye into the water outdoors, or at least near an open window in your work area. Measure your lye carefully and accurately. Slowly, and carefully begin to add the lye to the water. Remember, NEVER add water to lye, always lye to water. Do not breathe in the fumes from the water/lye mixture. Stir slowly, being careful that all lye particles are completely dissolved. The lye and water mixture will heat up, becoming very hot. When you are sure that the lye is completely dissolved into the water, set it aside and allow it to cool.

After it has cooled for awhile, you should begin to heat your oils. Add your solid oils (such as coconut oil, palm oil, palm kernel oil, lard, cocoa butter, shea butter, etc) to a non-aluminum pot. I prefer to use a stainless steel double boiler, but if you are very careful you can melt your oils over direct heat, VERY SLOWLY, ON VERY LOW HEAT. Gently warm the solid oils, stirring them as you warm them, until they melt. Now add your liquid oils, and gently stir until they are well blended.

If your lye solution has cooled, you may mix the lye and the oils. Slowly pour the cooled lye solution into the pot with the oils while stirring constantly. It is very important to pour slowly so that the caustic solution does not splash out of the pot and onto you. At this point, I use my stick blender for a couple of minutes, then let it rest and hand-stir for a minute or two, and repeat. Alternating between using the stick blender and hand-stirring allows the stick blender to cool a bit between sessions and prolongs the life of the stick blender. Many new soap-makers have burned their stick blenders up by using them continuously.

Your soap mixture will be quite thin when the lye solution and the oils are first combined. Gradually, as you continue to alternately stick-blend and hand-stir, the mixture will begin to thicken. You will need to continue stirring and mixing until the mixture reaches "trace". If you lift your spoon out of the pot, and drizzle a bit of the soap mixture into the pot, the soap falling off of the spoon should leave a trail on top of the soap. If it does, then you have reached trace. If not, continue to stir and mix for awhile longer.

If you are using a recipe that has been run through a lye calculator to check it for accuracy, and you measured accurately, then the soap will eventually reach trace. Some soaps such as Castile type soaps made with only olive oil and lye can take a very long

time to trace. You may alternately stir and stick-blend for 15 minutes or so and then rest for 15 minutes, stir and stick-blend more, rest more, etc; until it reaches trace.

After the soap has reached trace, you may add your pre-measured additives as called for in the recipe (scent, colorants, and herbs). Stir well to incorporate the additives. You must be prepared to work quickly, because some Fragrance Oils and Essential Oils are known to accelerate trace and cause the soap mixture to become very thick, very quickly. After the additives have been mixed into the soap, pour the soap into your prepared mold. If your mold has a lid, cover it with the lid. If not, cover the top with wax paper. Wrap the mold with old towels or blankets and place in a warm draft-free place for the next 24-72 hours. During that time, the soap will be going through the saponification process and probably through a gel stage.

Even though the temptation is great, you will need to wait at least 24 hours before you check on your soap. It needs to be firm enough to un-mold easily. If it is not, wrap it back up and check it again tomorrow. Your soap may still be caustic at this point, so be sure to have your gloves on when un-molding it and cutting it. As soon as you un-mold it you can cut it into bars. Check the appendix for plans for a basic wooden log mold and soap cutter, and for sources of ready made molds. Acrylic molds are very popular today since the soap un-molds easily from the acrylic molds and they are very easy to clean. Many of these molds have divider bars in them so you will not have to cut your bars. If you do cut your bars and have trimmings and end pieces you can save them and re-batch them later when you have enough.

Your bars of soap will need to cure for 6-8 weeks. During the curing process, the soap is becoming milder, excess water is evaporating from the bars and they will shrink slightly and become harder. You should place them on some type of rack that allows air to circulate freely around them. You will need to turn them occasionally to prevent warping as they dry.

HOT PROCESS SOAP

Many people prefer hot process soap-making to cold process because hot process soap can be used as soon as you un-mold it, although it will become harder and longer lasting when allowed to sit for a week or so. Hot process soap-making involves using heat after your regular cold process soap has “traced” to “cook” the soap. The heat accelerates the saponification process.

The most common method of hot process is to use a large stainless steel double boiler to cook the soap. If you are making a 3 lb. batch or smaller that will fit in your crock pot with plenty of room at the top for it to “wave” and fold over without spilling over, you can cook it in the crock pot on low heat. You can also cook your soap in a large covered roasting pan in the oven. I do NOT recommend direct heat due to the high probability of

overheating and/or scorching the soap mixture. There is also a high probability of a volcano or boil-over when you use direct heat.

Regardless of whether you use a double-boiler, a crock pot or a covered roasting pan in the oven, your hot process soap will go through the same stages. After it has begun to boil, if you continue to stir it and heat it gently, the big bubbles that you see when it first begins to boil will become lots of small frothy “champagne bubbles”. Continue to heat over low heat and stir continuously. Watch your mixture carefully. If it begins to puff up and look as if it about to volcano (overflow the pan), you must remove from heat and very quickly stir it down. As you continue to cook it, you will notice that it takes on the consistency of Vaseline. At this point you are ready to transfer it to the mold.

With all of these methods, you “glop” the soap mixture into the molds after it has finished cooking. You will need to bang the mold gently on the counter to remove air pockets and then top it off with more of the soap mixture. Be careful not to sling the soap mixture onto your skin as it will be very hot and can give you a severe burn. The top of hot process soap will not be very smooth. You can either over-fill the mold or then slice off the excess after it has hardened, or you can use special imprinted pieces of plastic to press a design into the top of the soap. A source for these pieces is listed in the appendix. Your hot process soap can be used as soon as it has cooled and been removed form the mold.

The ITMHP (In the Mold Hot Process) method is gaining popularity these days as well. With this method, you use special molds that are heat safe and put your molds into an oven that has been pre-heated to 170 degrees Fahrenheit. At this point, you can leave them in the oven for 2 hours at 170 degrees and then remove, or you can turn the oven off and leave them in the oven overnight. Either method seems to work equally well for me.

Chapter 3

Fragrances, Colors, & Other Additives

The two most commonly used additives for soap are fragrances and colorants. Fragrances can be either natural essential oils or man-made fragrance oils. There are several suppliers of both EO's and FO's listed in the appendix. Most suppliers post recommended usage rates on their websites as well as flashpoints. In order to keep this brief, we will not cover that here.

If you are making cold process soaps be sure that the fragrance you are using has been tested in cold process. Some fragrances can cause your soap to “seize” (solidify) or turn into “soap on a stick”. After you have a little more experience under your belt and a few special techniques, you may be able to work with tricky fragrances, but to increase your chances of success, for your first batches use a cold process tested fragrance oils that des not. Most reputable suppliers test their fragrance oils and put this information on their websites.

Many soapers like to add ground oatmeal or herbs and spices such as turmeric, paprika, colored clays, alkanet root, or beet root. Be careful not to add too much or the end result will be a scratchy bar of soap. Natural colorants usually result in soft, muted colors. If you want brighter colors you may want to use oxides, ultramarines, dyes, or micas.

If you are making layered melt and pour soaps, you'll want to make sure that the colorants that you are using are "non-bleeding", meaning that the colors won't bleed into each other and end up muddy. Again, this is something that is usually stated on the supplier's website. If it is not clearly stated that they are non-bleeding, be sure to ask.

Chapter 4

Recipes

I will post formulas rather than recipes because I want to be sure that you ALWAYS use a lye calculator to figure the proper amount of lye to use for the types and amounts of oils that you use. It is too easy to make typos in amounts when posting recipes and the success of your soap batch depends upon accurate measurements. A few of the online calculators that I have used are shown below:

www.thesage.com/calcs/lyecalc.html

<http://www.soapcrafters.com/lyecalc>

<http://www.snowdriftfarm.com/soapcalculator.htm>

Grocery Store Soap

The very first soap I ever made was made with this formula using oils that I was able to purchase at a local grocery store. It resulted in a hard bar of soap with a creamy lather. I was quite pleased with it.

- 40% Olive Oil
- 35% Lard
- 25% Coconut Oil

*Note: be sure to use a lye calculator to determine how much lye to use.

Castile Soap

Castile soap is traditionally made with all olive oil. This produces a very mild bar that would be great to use as a baby soap or a facial soap.

- 100% Olive Oil

*Note: be sure to use a lye calculator to determine how much lye to use.

Modified Castile Soap

Castile soap made with 100% olive oil doesn't produce a lot of lather, so many people add a little coconut oil to the mix to increase lather.

- 75 % Olive Oil
- 25% Coconut Oil

*Note: be sure to use a lye calculator to determine how much lye to use.

If you have really been bitten by soap bug, you will probably want to invest a little time researching the properties of various soap-making oils so you can design your own soap recipes. There are many good soap recipes on the web, using a variety of specialty oils and butters, but remember, always run any recipes that you plan to use through a lye calculator first.

There are several yahoo groups for soap-makers that you may want to consider joining. Of course, I think one of the best is the Beginner Soapmaking group (<http://groups.yahoo.com/group/beginner-soapmaking/>) since I own and moderate it, but there are many others. I encourage you to join one or more of these groups. It can very helpful to converse with people with shared interests . You may also want to consider attending a soap gathering in your area. Once you have witnessed the magical process of turning oils, fats, and lye and into soap, and have mastered the basics, you will find that there are many specialty techniques such as swirling multiple colors, layering colors, making whipped or floating soap, and much more. May this be the beginning of a wonderful journey for you. Happy soaping!

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