

# Cold Process Soap-making Instructions

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February 19, 2015

## Equipment:

No matter which recipe you choose, you're going to need some basic equipment. You'll probably already have a lot of these things in your kitchen!

- An accurate, precise (at least to the gram, ideally to .1 gram) **electronic scale** is so important! If possible, choose one with an AC adaptor (so that it won't turn off on you while you're measuring things).
- An **immersion blender** for emulsifying soaps.
- **Safety glasses** and **latex (or similar) gloves**
- A **large stainless steel pot** (not Teflon) for melting oils and mixing soaps.
- **Thermometer**--needs to measure temperatures between around 90 and 170 degrees Fahrenheit.
- **Measuring cups with spouts** are great for measuring oils, pouring soap into molds, portioning things out for coloring, etc.
- A **spray bottle filled with white vinegar** helps to neutralize the lye if you happen to get any on your skin.
- **Heat-safe containers** for measuring/mixing lye. I've used everything from juice pitchers to canning jars to emptied plastic sour cream tubs.
- **Spatulas**
- **Long-handled metal spoon**
- A **mold**--this can be just about anything! Some of my favorite molds are small cardboard boxes from Velveeta cheese. I've also used empty tin cans, a Pringles can, silicon baking pans in any shape or size, etc. If you use a repurposed container, be sure to line it with **freezer paper**, shiny side up, to make it easier to release it.

## Before You Begin:

1. Find a good recipe. If you need to adjust quantities or substitute oils, **run it through a lye calculator**, like the one you can find at soapcalc.net.
2. Figure out your design scheme. Decide which colors, fragrances, additives, etc. you want to use and how you want your finished soap to look.
3. Assemble all of your equipment, ingredients and materials. Measure out additives and fragrances and mix up colors.
4. Prepare your mold. Line containers if needed, put silicon pans on a cookie sheet or something to keep it stable.
5. Do not use hot water to mix lye. The reaction between lye and water gives off a lot of heat, so if you use hot water, it can get explosive.

**Basic Recipe:**

Makes about 1 lb. of soap (after curing)

6.08 oz. (172.4 g) cool distilled water  
2.265 oz. (64.2 g) lye (sodium hydroxide)  
8 oz. (226.8 g) olive oil  
4 oz. (113.4 g) coconut oil  
4 oz. (113.4 g) palm oil  
.5 oz. fragrance oil (optional)

**Procedure:**

1. Measure your lye and water into separate containers.
2. Slowly pour the lye into the water (NEVER the other way around) while stirring with a metal spoon. When the lye has dissolved, set the solution aside where it won't be knocked over or accidentally mistaken for water. Always mix the lye in a well-ventilated area--the fumes are awful.
3. Measure oils into your metal pot. I always start with solid oils so they have time to melt while you measure out your liquid oils. Weigh each oil separately so that if you measure out too much, you can put it back without mixing it with other oils.
4. Melt oils on medium or low heat. You can heat oils in the microwave, if you use appropriate containers.
5. When your lye solution and your oils reach about 100-120 degrees, it's time to mix them. Always pour the lye into the oils. Use a container that is deep enough for you to cover the base of your immersion blender. Stir slowly with your metal spoon as you add the lye solution.
6. Using your stick blender, mix the lye solution and oils. You can add fragrances and colors at any point during this mixing process, though I recommend that your first batch not have color or fragrance so you can get used to the process first. Mix until they thicken enough to leave traces on the surface when you lift your blender (this phase is called "trace").
7. Once soap reaches trace, it's time to pour it into molds. Soap can be finicky around this point, so sometimes it'll go quickly from light trace to super thick. Pour slowly to avoid splatters. Use a back and forth movement to ensure an even layer.
8. Cover lightly with a towel and set aside in a safe place where it won't be disturbed for at least 24 hours. If your soap is around 90 degrees or above, it may go through what's called "gel phase," where it turns somewhat dark and translucent. This is normal. If it doesn't go through gel phase, that's normal too. Either way is fine. :)
9. After about 24 hours (longer is fine, too), your soap should be hard enough to remove from the mold. If it's too soft at 24 hours, try waiting another day or two. Slice soap into bars.
10. Set the sliced bars a little apart from one another and allow them to cure for a few weeks. Soap is safe to use within about 24-36 hours, but your bars will continue to harden for several weeks. Harder bars will last longer, so it's usually a good idea to let the soap cure before use.

### **Handy Hints:**

- Use about 1/2 an ounce of fragrance or essential oil per pound of oils.
- When using herbal colorants such as cinnamon, turmeric or cocoa powder, use about 1/2 tsp. per pound of oils.
- Mix herbal colorants, ultramarines and oxides with a little bit of oil for best dispersion. Food colorings aren't formulated for soaps, so you can use them, but the colors might morph.
- Fragrances containing vanilla will discolor soap to varying degrees of brown depending on the amount of vanilla they contain, so be sure to take that into account when you're planning out the design of your soap.
- Fun mix-ins: poppy seeds, calendula petals, citrus peels, honey.
- You can brew herbal tea to use in your soap. Just brew the tea with distilled water, then measure out the amount you need. Just make sure you don't mix your lye with the tea while it's still hot--the lye needs to be mixed with cool water.
- Sometimes soap can get a chalky white layer on top. This is called soda ash, and it's harmless. Just wipe it off with a wet towel if it bothers you.
- If you get into soap-making, take some time to learn about the qualities of different oils. Cocoa butter hardens soap, castor oil makes soap lather better, and coconut oil, in high levels, can make your soap more drying. Have fun!

### **Resources:**

There are so many websites out there to help you find supplies and answers to all your soap-making questions. Here are some of my favorites!

- [www.thesage.com](http://www.thesage.com) is a great source for soap supplies. Their prices are usually good and they've got a great selection. They're located out of Nibley, UT, and they ship next day in most cases, so your supplies usually arrive within about 3 days after your order. Hard to beat that!
- [www.brambleberry.com](http://www.brambleberry.com) is a great source for supplies as well. They have a great selection. They test their fragrances and colorants extensively, so they'll usually let you know if a fragrance is going to alter either the process or the color of your finished soap, and a lot of their colors have little swatches that show what they look like in CP soap.
- [www.essentialdepot.com](http://www.essentialdepot.com) is a great place for finding lye.
- Pine Meadows ([www.pinemeadows.net](http://www.pinemeadows.net)) is located in East Bay Provo (near the post office). They have ridiculous hours and they're often more expensive, but it is pretty convenient to walk into the store and smell fragrances or get ingredients the same day. They also carry lye, though you have to order it by phone.
- [www.soapqueen.com](http://www.soapqueen.com) is a blog done by the Brambleberry people that has lots of really cool project ideas and tutorials. She posts step-by-step videos for a lot of projects too.
- [www.soapcalc.net](http://www.soapcalc.net) is an invaluable resource for double-checking found recipes and especially for creating your own. You just enter the oils you want in the percentages you want them, and it'll create your recipe for you.
- Hi-Valley Chemical ([www.hvchemical.com](http://www.hvchemical.com)) is a local-ish (Centerville) source for lye.
- If you have questions, you can email Lindsay Ebert at [blueplasticdino@yahoo.com](mailto:blueplasticdino@yahoo.com).

## **Guide to Basic Lotion-making:**

This tutorial is lightly adapted from a post on [www.soapqueen.com](http://www.soapqueen.com).

Once you've made soap, making lotion is easy and only takes a couple of extra (inexpensive) ingredients, so why not give it a try? Once you've tried making your own, you'll never go back to expensive store-bought lotion again!

### **Ingredients:**

- 18 oz. distilled water\*
- 1.2 oz. shea butter
- 1.7 oz. sweet almond oil
- 1 oz. avocado oil\*\*
- 1.2 oz. emulsifying wax
- 1 oz. stearic acid\*\*\*
- .2 oz. preservative, such as Optiphen or grapefruit seed extract (GSE)
- .1 oz. fragrance oil or essential oil

### **Equipment:**

- digital scale
- immersion blender
- wide mouth pint jar
- wide mouth quart jar or sauce pan
- thermometer
- whisks and spatulas
- 5 4-oz. pots

### **Procedure:**

1. Assemble all of your ingredients and tools. Having all this assembled ahead of time makes everything much easier!
2. You can heat these oils either in a glass jar in the microwave or in a saucepan on the stove. Add sweet almond oil, avocado oil, stearic acid and emulsifying wax and melt over medium heat. When oils are melted, add the shea butter and stir until it melts in too. It doesn't need to get very hot.
3. Using a pint jar or small saucepan, warm your water to about the same temperature as your oils. If your water is too cold, the waxes will immediately solidify when you pour the water in.
4. Pour the water into the oils (this time the order is less important, but it's still better to put water into the oil).
5. If you're using a wide mouth quart jar, your immersion blender should fit right inside. Pulse a few times, then when the mixture turns light, blend until mixture is fully emulsified. Add fragrance oil, and when mixture is less than 140 degrees Fahrenheit, add your preservative. (If you add your preservative at too high a temperature, it renders it useless. And yes, you do need preservative--lotion definitely molds if it doesn't have anything to prohibit mold.) Mix well to combine.
6. Pour into prepared bottles or pots while lotion is still warm. This makes a thick, rich cream, so if your lotion cools down too much, it will be difficult to pour. Allow lotion to

cool to room temperature before putting the lids on (otherwise you'll get condensation on the lids).

\*You can substitute aloe vera juice (not the gel stuff you rub on a sunburn) or brewed herbal tea (comfrey, peppermint, rosehips--even teas you wouldn't drink can be lovely, nourishing bases for your homemade lotions!) for the distilled water here if you want.

\*\*You can also substitute other oils for these oils depending on the properties you want your lotion to have and what you have on hand. These oils were selected because they're nourishing to the skin and absorb readily to avoid the greasy feel. Castor oil is not a good lotion-making oil.

\*\*\*Stearic acid is derived from palm trees and gives your lotion body and fluffiness. If you want a thinner lotion, you can add less stearic acid.

## **Guide to Lip Balm-making**

Fills about 12 .25 oz. slider tins.

### **Ingredients:**

.75 oz. beeswax

.5 oz. cocoa butter

.75 oz. shea butter (high melt-point shea will resist graininess better)

1 oz. liquid oil of your choice (almond oil, jojoba oil, avocado oil, etc.)

1/2--1 tsp. flavor oil **OR** one or two drops of essential oil, such as peppermint (optional)

1/2 tsp. vitamin E oil (optional, keeps lip balm from going rancid too quickly)

### **Equipment:**

- digital kitchen scale
- double boiler **OR** glass Pyrex-type measuring cup and small saucepan
- empty lip balm containers
- spatula

### **Procedure:**

1. Set up your double boiler (or fill a saucepan with a couple inches of water) and set the heat to medium low.
2. Melt the beeswax, cocoa butter and shea butter slowly. When they're all melted, add your liquid oil and heat through.
3. Remove from heat. Add flavoring and vitamin E, if using, and pour quickly into desired containers. Lip balm will solidify fairly quickly, so if it gets solid before you're done pouring, just warm it up a bit and keep going.
4. Allow lip balm to cool completely before putting the lids on.