Cold process soap making

Mary Sheldon
Green Forests Work
Setting Up for Soap Making

✧ You will want to get out all your equipment and ingredients. Make sure you have enough of each ingredient on hand.

✧ If using a wooden or cardboard mold – line with either saran wrap, a trash bag, or freezer paper.

✧ Put on safety goggles and gloves.
Equipment

- soap mold
- digital scale
- 2 measuring cups
- immersion blender
- spatula
- mixing spoon
- melting pot (oils)
- stainless steel stock pot (lye water)
- candy thermometer
Ingredients

- base oils
- 100% lye
- distilled water
- (goats milk)
- fragrance (if desired)
- colorant (if desired)
- ground herbs (if desired)
<table>
<thead>
<tr>
<th>Oil</th>
<th>Shelf Life</th>
<th>SAP</th>
<th>Usage</th>
<th>Oil Properties</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apricot Kernel Oil</td>
<td>6 months to 1 year</td>
<td>.135</td>
<td>up to 15%</td>
<td>Lightweight oil, light yellow color</td>
<td>Skin loving, high linoleic and oleic acid content</td>
</tr>
<tr>
<td>Avocado Oil</td>
<td>1 year</td>
<td>.133</td>
<td>up to 20%</td>
<td>Mediumweight liquid oil, yellow color</td>
<td>Skin loving, great for superfatting</td>
</tr>
<tr>
<td>Beeswax (White &amp; Yellow)</td>
<td>Indefinite</td>
<td>.94</td>
<td>up to 8%</td>
<td>Solid wax, same properties except white has been naturally bleached</td>
<td>Adds no odor or color to products, acts as a hardening agent</td>
</tr>
<tr>
<td>Canola Oil</td>
<td>1 to 2 years</td>
<td>.132</td>
<td>up to 40%</td>
<td>Mediumweight, yellow liquid</td>
<td>Creamy lather, can be a partial substitute for olive oil</td>
</tr>
<tr>
<td>Castor Oil</td>
<td>1 year</td>
<td>.128</td>
<td>up to 25%</td>
<td>Thick, viscous oil with a distinct smell. Dark yellow color</td>
<td>Lots of creamy lather</td>
</tr>
<tr>
<td>Cocoa Butter</td>
<td>1 to 2 years</td>
<td>.137</td>
<td>up to 15%</td>
<td>Hard solid at room temperature, o - white to yellow color</td>
<td>Solid, moisturizing</td>
</tr>
<tr>
<td>Coconut Oil</td>
<td>More than a year</td>
<td>.178</td>
<td>up to 30%</td>
<td>Solid yellow oil at room temperature</td>
<td>Hardening agent, very cleans- ing</td>
</tr>
<tr>
<td>Emu Oil</td>
<td>1 year, up to 3 years</td>
<td>.192</td>
<td>up to 12.5%</td>
<td>Mediumweight, yellow liquid</td>
<td>Skin loving, anti-in amma- tory properties</td>
</tr>
<tr>
<td>Evening Primrose</td>
<td>6 months to 1 year</td>
<td>.19</td>
<td>up to 6%</td>
<td>Lightweight, pale yellow liquid</td>
<td>Skin loving, high content of fatty acids</td>
</tr>
<tr>
<td>Flax Seed Oil</td>
<td>6 months to 1 year</td>
<td>.19</td>
<td>up to 5%</td>
<td>Colorless to light yellow liquid. Lightweight.</td>
<td>Skin loving, high content of fatty acids</td>
</tr>
<tr>
<td>Fractionated Coconut Oil</td>
<td>Indefinite</td>
<td>.34</td>
<td>up to 30%</td>
<td>Clear, lightweight, liquid oil</td>
<td>Skin loving, good carrier for essential oils</td>
</tr>
<tr>
<td>Grapeseed Oil</td>
<td>3 months to one year</td>
<td>.187</td>
<td>up to 15%</td>
<td>Liquid, light colored oil</td>
<td>High antioxidant content, absorbs quickly</td>
</tr>
<tr>
<td>Hazelnut Oil</td>
<td>3 months</td>
<td>.136</td>
<td>up to 15%</td>
<td>Lightweight, yellow liquid</td>
<td>Non-greasy, skin loving</td>
</tr>
<tr>
<td>Hempseed Oil</td>
<td>3 months, 9 months if frozen</td>
<td>.135</td>
<td>up to 20%</td>
<td>Unrefined: Dark brown, thick, Reed: Yellow, mediumweight</td>
<td>Skin loving, high fatty acid content</td>
</tr>
<tr>
<td>Jojoba Oil</td>
<td>Indefinite</td>
<td>.069</td>
<td>up to 10%</td>
<td>Clear liquid wax, golden color</td>
<td>Can increase soap shelf life</td>
</tr>
<tr>
<td>Mango Butter</td>
<td>1 year</td>
<td>.184</td>
<td>up to 15%</td>
<td>White, soft solid at room temperature</td>
<td>Skin loving, similar to cocoa butter</td>
</tr>
<tr>
<td>Meadowfoam Oil</td>
<td>3 years</td>
<td>.12</td>
<td>up to 20%</td>
<td>Golden yellow, lightweight oil</td>
<td>Non-greasy liquid, can be a substitute for jojoba oil, creamy lather</td>
</tr>
<tr>
<td>Olive Oil</td>
<td>2 years</td>
<td>.134</td>
<td>up to 100%</td>
<td>Varies, typically yellowish green liquid. Medium-weight</td>
<td>Pomace: accelerates trace Pure: creates a very hard soap</td>
</tr>
<tr>
<td>Palm Oil</td>
<td>1 year</td>
<td>.144</td>
<td>up to 30%</td>
<td>Yellow to ivory liquid, mediumweight</td>
<td>Hardening agent, commonly used with coco-nut oil</td>
</tr>
<tr>
<td>Peanut Oil</td>
<td>6 months to 1 year</td>
<td>.19</td>
<td>up to 25%</td>
<td>Pale yellow liquid</td>
<td>Hardening agent</td>
</tr>
<tr>
<td>Safflower Oil</td>
<td>1 year</td>
<td>.19</td>
<td>up to 20%</td>
<td>Yellow liquid</td>
<td>Skin loving, also great for lotion bars</td>
</tr>
<tr>
<td>Sesame Oil</td>
<td>6 months to 1 year</td>
<td>.19</td>
<td>up to 10%</td>
<td>Odorless, light yellow liquid</td>
<td>Skin loving, high vitamin E content</td>
</tr>
<tr>
<td>Shea Butter</td>
<td>1 year</td>
<td>.128</td>
<td>up to 15%</td>
<td>Re ned: Neutral smell, soft solid Unre ned: nutty smell, soft</td>
<td>Skin softening, also great for lotions and balms</td>
</tr>
<tr>
<td>Soybean Oil</td>
<td>3 months if refrigerated</td>
<td>.135</td>
<td>up to 50%</td>
<td>Yellow liquid</td>
<td>Hardening agent, skin conditioning</td>
</tr>
<tr>
<td>Sunflower Oil</td>
<td>3 months if refrigerated</td>
<td>.134</td>
<td>up to 20%</td>
<td>Yellow liquid</td>
<td>Non-comedogenic, unstable lather</td>
</tr>
<tr>
<td>Sweet Almond Oil</td>
<td>6 months to 1 year</td>
<td>.136</td>
<td>up to 20%</td>
<td>Lightweight oil, ideal for use in salt scrubs</td>
<td>Skin loving, high fatty acid content</td>
</tr>
<tr>
<td>Tamanu Oil</td>
<td>2 years, 5 years if refrigerated</td>
<td>.189</td>
<td>up to 5%</td>
<td>Nutty scent, dark color</td>
<td>Skin loving, good for facial creams or massage oil</td>
</tr>
<tr>
<td>Walnut Oil</td>
<td>3 months</td>
<td>.192</td>
<td>up to 45%</td>
<td>Lightweight oil, golden color</td>
<td>Skin loving, high antioxidant content</td>
</tr>
</tbody>
</table>
Natural Colorants

Alfalfa: (use dried, ground alfalfa) gives medium green color
Alkanet root: (infuse in oil) produces purple to blue color
Annatto: (infuse in oil) produces yellow to orange color
Beet root powder: results in squash yellow color; contains antioxidants
Black walnut hull: (use dried, ground) adds purple to black specks; good for exfoliating
Calendula: (dried, whole flowers) produces yellow streaks; has healing properties
Calendula: (powdered) adds yellow color; healing benefits
Carrots: (use ground, raw) produces yellowish orange color; contains beta carotene
Chamomile: (use dried, powdered) produces beige to yellow color
Cinnamon: brown color; can be irritating to some skin types
Cloves: (use ground) brown color; can be irritating to some skin types
Cocoa powder: brown color
Chocolate: (use a melted chocolate bar) brown color
Coffee: (use finely ground) brown to black color; exfoliating, has antioxidants, and removes odors
Cornmeal: yellow color; exfoliating
Blue cornmeal: purplish blue to brown color; exfoliating
Elder berries: (use in lye) light brown color; high in antioxidants even though original color has changed
Green tea powder: brownish green color; antioxidants
Madder root: red to purple color (find it here)
Orange Juice: (use in place of water in lye/water solution) beige to light orange colors; lowers pH of soap
Paprika: gives an orange color
Rose hips: (use ground) produces burgundy to brown color; high in Vitamin C (find it here)
Sage: (use dried, ground) produces green to brown colors
Spearmint: (use dried, ground) green to brown color
Spinach: (use dried, ground) produces light green color
Tree lichen: (depends on type used) from pink to green to brown
Tumeric: results in yellow color
Lye Calculator

Basic Cold Process Recipe (Super fat 5%):

- 8 oz. **Coconut Oil (24%)**
- 15 oz. **Olive Oil (44%)**
- 11 oz. **Palm Oil (32%)**
- 4.8 oz. **Lye**
- 11.2 oz. Distilled Water

Superfatting is the process of adding extra fats (oils or butters) when formulating a soap recipe, so there is more fat in the mixture than the lye can react with during the chemical reaction.

Superfatting leaves a portion of unincorporated oils in the finished soap. Superfatted soaps have superior moisturizing and emollient qualities.

Lye Safety

- Adding lye to room temperature water can cause the water to reach temperatures up to 200 °F. – could cause serious burns! The mixture also creates fumes, which should not be inhaled.

- If you have a spill - the best way is to rinse as much of it off quickly with water and then neutralize the tiny bit that’s left with vinegar.

- Spraying a vinegar solution mist on your work area after you have cleaned up the lye spill will not harm anything, but vinegar is not your primary liquid to use to clean up a lye spill of any kind.

ATTENTION SOAPERS:

Pouring vinegar onto your skin to neutralize lye can actually be ineffective or even make a lye burn worse.

If you come into contact with lye, flush the area under plenty of running water for at least 15 minutes.
Preparing Lye Water

- Place measuring cup on scale and tare. Pour liquid in until correct amount for your recipe.
- Place liquid in stock pot and set aside
- Place dry measuring cup on scale and tare. Carefully pour lye into cup until you achieve the correct amount for your recipe.
- Pour lye into the liquid in stock pot – stirring until dissolved.
- Set aside to cool – approx. 95° F
Preparing oils

- measure oils needed
- place all oils in melting pot
- heat until all oils are liquid
- take pot off heat and let cool – approx. 95° F
Temperature Regulation

- Check the temperature of the lye water. You want the temperature of the lye water to go down to approximately 95-100 degrees.

- Next, check the temperature of the oil mixture. Place pot in cool water bath (if needed) until oil mixture reaches approximately 95-100 degrees.

- Double check to make sure lye mixture and oil mixture are within five degrees of each other, cleaning thermometer after each use.
Combining Lye Water and Oil

- Insert your stick blender into oil mixture.
- Slowly pour the lye water into the oil. Be careful not to splash the lye water.
- Blend with stick blender until soap traces. Soap reaches trace when it thickens sufficiently that you can see ripples across the top of the soap.
Pouring into mold

- Pour soap mixture gently into mold.
- Fill to ½” from top
- Place in warm area and insulate with towels
- Leave mixture to cure for approx. 24 hours
Cutting your soap

After you have taken your soap out of your mold you will need to cut into bar size. This can be accomplished with several different methods.
Lip balms & lotions
Easy homemade coconut and beeswax lip balm

Basic ratio:
- 2 parts coconut oil
- 1 part beeswax
- a few drops of vitamin E
- Heat in double boiler or 30 sec. increments in microwave until fully melted.
Finish

Pour melted wax and oil into container.
It will take your balm a little while to set up - no more than a couple hours.
THANK YOU!