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## HOW TO MAKE SOAP AT HOME

Making your own soap at home is easy, frugal, creative and fulfilling. There's something really marvelous about taking a bar of your own homemade soap into the bath or shower with you.

Whether you are looking for a more natural alternative to commercial soap, or are just a crafty person looking for a new creative adventure, making soap is fun, and more than a little addictive! Once you understand the basics of how to make soap, you can get started right away.

I will tell you about basic techniques of how to make your own homemade soap. It will guide you step-by-step through some interesting soap recipes, and give you the knowledge and resources to start developing your own soapy creations.

But first we discuss the mechanism of the process. Soap is the result of a basic chemical reaction between fats or oils and lye. Soaps are sodium or potassium salts of long chain fatty acids. When triglycerides in fat/oil react with aqueous NaOH or KOH, they are converted into soap and glycerol. This is called alkaline hydrolysis of esters.

The soap molecule has two parts: a polar group ( $-\text{COO}^-\text{Na}^+$ ) and a non-polar group (R-hydrocarbon part). The polar group is called the head and the non-polar group is called the tail. Thus, the soap molecule has a polar head and a non-polar hydrocarbon tail. The polar head is hydrophilic in nature (water loving) and the non-polar tail is hydrophobic (water repelling) in nature.

The saponification reaction is exothermic in nature, because heat is liberated during the process. The soap formed remains in suspension form in the mixture. Soap is precipitated as a solid from the suspension by adding common salt to the suspension. This process is called **Salting out of Soap**.

There are four basic methods for making soap at home:

1. **Melt and Pour** - melt pre-made blocks of soap and add your own fragrance
2. **Cold Process** - the most common - making soap from scratch with oils and lye
3. **Hot Process** - a variation of cold process where the soap is actually cooked in a crock pot or oven

4. Rebatching - grinding up bars of soap, adding milk or water, and re-blending them

Each method has pros, and cons, and variations. To start with, we'll discuss the two most popular methods of soap making, Melt and Pour and Cold Process Soap Making.

#### Melt and Pour Soap Making

Making soap with a "melt and pour" base is sort of like making a cake with a cake mix. What you lose in control of your ingredients and customization of your recipe, you make up for in safety, ease, and convenience.

With melt and pour soap making, you buy pre-made blocks of uncolored, unscented soap "base" from a craft store or soap supplier. You melt the soap base in the microwave or a double boiler. When the soap is fully melted, you add your fragrance, color and/or additives. Put it in a mold, wait for a few minutes, and it's done. The soap is ready to use as soon as it hardens.

To get started making melt and pour soap you only need:

1. A counter top or other clean workspace with a microwave or double boiler
2. A heat resistant bowl for the microwave
3. A couple of spoons or whisks
4. Some melt and pour soap base
5. A set of measuring spoons
6. Fragrance, color, or additives, as desired
7. Something to mold the soap in

That's it. From your first try, you can have wonderful results.

#### Pros of Melt and Pour Soap

- An easy and inexpensive way to start making soap
- No need to deal with dangerous lye mixture
- You don't need a lot of ingredients to start
- Your soap is ready to use as soon as it hardens

#### Cons of Melt and Pour Soap

- No control over your ingredients
- Melt and Pour is not quite as "natural" as other methods.

(Many manufacturers add chemicals to increase lather or to better allow the soap to melt.)

- Your soap is only as good as the base you purchase
- Cold Process Soap - Starting From Scratch
- If making melt and pour soap is akin to using a cake mix, "cold process" is making your cake from scratch. You control everything that goes into the pot, and you can make it as "natural" as you want. However, your

setup is a little more complicated, and you'll need to learn a few techniques of the craft first.

- To make cold process soap, you heat the oils in your soap pot until they're approximately 100 degrees. Slowly add the lye-water mixture and blend the soap until it thickens to "trace". After the mixture reaches trace, you add your fragrance, color, and additives and pour it into the mold. The raw soap will take about 24 hours to harden, and about four weeks to cure before it's ready to use.

- To get started making cold process soap, you'll need:
  1. A flat, uncluttered workspace with a heat source and access to water
  2. Some animal fats or vegetable oils
  3. A pitcher of lye-water
  4. A soap pot and some other easily found tools and equipment
  5. Fragrance or essential oil, as desired
  6. Natural or synthetic colorant, as desired
  7. A mold to pour the raw soap into
  8. A cool, dry place to let the soap cure

#### Pros of Cold Process Soap Making

- Your soap is truly made from scratch
- You control all of the ingredients in the soap
- You can tailor your recipe into unlimited variations

#### Cons of Cold Process Soap Making

- You need to learn how to safely work with lye
- You'll need more ingredients and tools to start
- It takes longer to make and there is more cleanup involved
- You need to wait several weeks before your soap is ready to use.

Whichever method you choose, you can make great soap. Work patiently, and follow the instructions closely to start with. Once you're familiar with the basic steps, you'll be able to let your creative inspirations flow and make all sorts of wonderful soap creations.