Understanding Superfat

by Tina Moenck Excerpt from "The Soap Making Handbook Vol 1"

I want to better explain what superfat is. Superfat is excess oil in your soap, or you can think of it as a lye discount in your recipe. What this means is you have free oil in your soap that has not been saponified (turned into soap). The superfat allows your soap to be much milder and help your skin retain moisture. An average superfat is 5% for recipes. A 5% superfat means you are discounting your lye 5%, so there will be excess oil. Lye can only saponify so much oil, and if you add more oil than it can saponify you end up with a superfat. If you add more lye than is needed, your soap will be lye heavy, which is harsh and irritating.

There are also certain oils and butters that have a high amount of unsaponifiables. Unsaponifiable means it can't react with lye to form soap. Unrefined shea butter is high in unsaponifiables, so this is why it's not recommended to be used at higher amounts in recipes. If oils and butters with high amounts of unsaponifiables are used in recipes, there will be a lot of free oil, and the soap will be softer. These also have a higher chance of going rancid and getting DOS. To give you an example, African Black Soap is traditionally made with a very high amount of shea butter, and this soap is very soft.

Oils like olive and coconut oil do not have unsaponifiables. When you use oils like these you know your superfat will be exact in your recipe. Using oils with unsaponifiables means your superfat will not be exact. I suggest if you are planning on using oils higher in unsaponifiables that you calculate your recipe with a lower superfat around 3%. I don't ever recommend using a 0% superfat, unless you are making laundry soap or liquid soap. We don't want excess oils in our laundry soap that can transfer to the clothing. We don't want excess oil in our liquid soap, because it will cloud the soap and settle to the bottom. We do, however, want a superfat in our body soaps, so the soap is milder on the skin. Think of a superfat as a lye buffer just in case of any errors on your part or on the part of the lye manufacturer.

If you accidentally add more or less oil (in small amounts) than is needed, the superfat acts as a buffer. If you accidentally add a lot more oil, or not enough lye then in that case you can rebatch if you know exactly what mistakes were made. This is also why it's very important to use a good scale, and to check off ingredients as you use them. Even though coconut oil has no unsaponifiables it's still only recommended to be used no higher than 35% of your recipe, because it's so cleansing it can be drying. However, if you want to use it at higher amounts (such as 80-100% for salt bars), it's recommended to use a 20% superfat so it's not so drying.

Higher superfats mean soft soap and higher chances for DOS, so this is an important thing to think about when creating recipes. Each oil has a certain amount of lye needed to turn an ounce of it into soap. Therefore, if you use less than the amount of lye needed you have a superfat (excess oil). If you add more lye than the amount required for that recipe your soap is

lye heavy. If you use the exact amount of lye needed you have a 0% superfat. I also had some questions about recipes. If you see a recipe that says it has a 5% superfat, this means the superfat is already included into the recipe, and you don't need to add any more oil. If you add more oil, you are increasing the superfat. However, you can set 5% of the oil from the recipe aside to add at trace or after the cook if doing HP. Therefore, if you are working with a recipe that says 0% superfat you can add 5% more oil and have a 5% superfat.

For more information I also did a video on YouTube on understanding superfat. Here is the link. https://youtu.be/d8_5LOqcXi0