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## GENERAL NOTES ON MAKING PRODUCTS

### A FEW TERMS

What we're following are called **formulas**, not "recipes". Recipes are for cooking and DIYers; formulas are for bath & body products.

The word **chemical** just means something composed of elements, which is to say every single thing on earth is a chemical. It doesn't mean something is bad or good, just that it's composed of matter.

**Anhydrous** means something is without water or doesn't contain water. Our whipped butters don't contain water; the lotions do.

### INCI OR INTERNATIONAL NOMENCLATURE OF COSMETIC INGREDIENTS

The INCI is the name you'll see in brackets for an ingredient at our suppliers' shops, in data sheets or bulletins from manufacturers or distributors, in trade magazines and formulas, and ingredient lists. For oils, butters, and essential oils, it'll be the botanical name with the common name in brackets. *Butyrospermum parkii* (shea butter) fruit is shea butter. For other ingredients, this will be the chemical name of the ingredient. For instance, the INCI for Ritamulse SCG is (Glyceryl stearate (and) cetearyl alcohol (and) sodium stearyl lactylate). The (and) means that you'll also find that compound in the ingredient.

In Canada, we use the 11th edition of the INCI name book, while the US uses the 2nd edition from the 70s.

## CONVERTING FORMULAS TO WEIGHT

LOTION BAR FORMULA	MAKING 100 GRAMS	MAKING 400 GRAMS
33% beeswax	33 grams beeswax	132 grams beeswax
33% mango butter	33 grams mango butter	132 grams mango butter
33% grapeseed oil	33 grams grapeseed oil	132 grams grapeseed oil
1% fragrance or essential oil	1 grams FO/EO	4 grams FO/EO

When reading a formula, convert the % sign to the word grams, and you will get a formula done by weight. It should total 100 grams. If you want more than 100 grams of a product, multiply it by how much you want. If you want 200 grams, multiply by 2. If you want 500 grams, multiply by 5. And so on...

You don't need to use a soap calculator alter the batch size as that makes it far too complicated. If you wanted to make 50 grams of this batch, convert the % sign to the word grams, and divide the numbers by 2. You can round the numbers up or down to make it easier.

LOTION BAR FORMULA	MAKING 50 GRAMS	MAKING 25 GRAMS
33% beeswax	16.5 grams beeswax	8.25 grams beeswax
33% mango butter	16.5 grams mango butter	8.25 grams mango butter
33% grapeseed oil	16.5 grams grapeseed oil	8.25 grams grapeseed oil
1% fragrance or essential oil	0.5 grams FO/EO	0.25 gram FO/EO

## MAKING SMALLER BATCHES

Please note, I don't recommend making really small batches as it's really hard to be accurate if you're trying to add 0.05 grams preservative. Plus, you'll want to have enough to put in a tiny bottle to observe the stability and preservation over time.

## WHY WE ALWAYS MEASURE BY WEIGHT

We need to measure every formula you want to make by weight as it's more accurate. If I tell you to use 1 tablespoon of beeswax, is that before or after it's melted? Do you shave the beeswax off or does it come in pastille form? When we make things by weight, we don't worry about those things! Besides, when we measure everything on the scale into the container, we only have one or two things to clean instead of all those tiny spoons and measuring cups! Invest in a good digital scale – you should get one for about \$30 or so – and you'll be so happy with your products.

## **HOW TO USE A DIGITAL SCALE**

Always hit the “tare” or “zero” button before weighing the next item to re-set the scale to zero. EXCEPT when using amounts lower than 5 grams. If you wanted to measure something that was 2 grams, put the container on the scale and count from whatever number appears there instead of hitting the “zero” or “tare” button. These scales aren’t great at measuring small amounts under 5 grams.

## **MEASURING ESSENTIAL & FRAGRANCE OILS**

A quick note on essential and fragrance oils: We don’t weigh them in drops as that’s an inaccurate measurement and we’re all about the accuracy around here! So please weigh them by grams. You can measure them with a pipette at around 1 ml to 1 gram of essential oil, but this isn’t really as accurate as they all have different volume measurements. It’ll do for today, but when making things at home and especially at higher amounts, please weigh all your fragrance and essential oils.

## **CONSIDERING THE EFFECTS OF ESSENTIAL OILS**

Another note on essential oils: When you’re using them, consider where on the body the product might go. Essential oils that tingle on application – mint, cinnamon, clove, nutmeg, black pepper – might not be a good idea for products that might end up on sensitive mucous membranes or in water in the tub.

## **SOME THOUGHTS ON CHOOSING OILS...**

Choose an oil that has a long shelf life, like olive oil, sunflower oil, soy bean oil, and so on. The shelf life of your product is the shelf life of the shortest lived oil. Grapeseed oil and hemp seed oils last about three months, even shorter if you have them in a product with a large surface area, like bath bombs.

## **SUBSTITUTING ON OIL FOR ANOTHER**

In any formula of mine, you can substitute an oil for an oil, a butter for a butter, an oil for a butter, and a butter for an oil without ruining the product, as long as it isn’t something that requires the oil or butter for consistency, like whipped butters or lotion bars.

## **ANTI-OXIDANTS & PRESERVATIVES**

Anti-oxidants are ingredients that retard or slow down the rancidity of our oils, like Vitamin E, so they extend the shelf life.

Preservatives are ingredients that prevent contamination of our ingredients by bacteria, fungus, mold, yeast, and so on in products that contain water or will be exposed to water.

An anti-oxidant will not prevent contamination, and a preservative won't retard rancidity.

Products like whipped butters, lotion bars, lip balms, and salves don't contain water - they're anhydrous or "without water" - and won't be exposed to water, so we don't need a preservative. If we want to extend the life span of our product, we could add 0.05% to 0.1% T-50 mixed tocopherols (Vitamin E) to it. There are too many variables to figure out how much longer we would extend the life, but we know it will be longer than one without the anti-oxidant.

When we use anything that contains water or might be exposed to water, we need to use a preservative. The one I use the most is **liquid Germall Plus**, a broad spectrum preservative that contains propylene glycol (60%), diazolidinyl urea (39.6%), and iodopropynyl butylcarbamate (0.6%). It should be used at 0.1% to 0.5% in the cool down phase of any products that contains or will be exposed to water. ("Broad spectrum" means it covers bacteria, yeast, mold, and fungus.)

### **WHY DO I RECOMMEND DISTILLED OR REVERSE OSMOSIS WATER?**

Using distilled water or reverse osmosis water in these formulas is essential. Even boiled water can contain minerals and metals that can cause or speed up contamination or rancidity. Invest \$2 for four litres (one gallon) of distilled water and save yourself the heartache of seeing a great product go bad!

### **RECONSTITUTING 100x or 200x CONCENTRATED ALOE VERA**

We can't just add this concentrated powder to a product, we need to reconstitute it first. Measure 1 gram aloe vera 100x powder into a bottle, then add 98.5 grams distilled water with 0.5 grams Germall Plus liquid. Shake well until mixed. You might need to warm the water slightly if it's cold.

If you have 200x aloe vera, to reconstitute it we use 1 gram 200x aloe vera with 1 gram Germall Plus liquid and 198 grams distilled water.

### **A NOTE ON FRAGRANCES/ESSENTIAL OILS...**

If you can't decide on a fragrance/essential oil, you can add one later as I design my formulas to be used that way.