**Information for preservatives** (for Miriam)

Natural bath and body products exclude the presence of chemical and synthetic preservatives, (parabens, benzoates, formaldehyde, etc.), emulsifiers, artificial colors, perfumes, etc.
Bath and body product makers should know which ingredients they are putting into their products. Some customers are well informed about potentially hazardous ingredients, and if you do not know how to answer their questions you bring yourself into a difficult situation. Customers can assume that you are hiding something, that you do not know or that you didn’t make these products.

Before you put any ingredients into your products do some research, inform yourself about all ingredients which you using and then proceed with safety and health as your priority.

Of all ingredients that can be put into bath and body products, preservatives are the most dangerous.

**PRESERVATIVES**

A preservative is a naturally occurring, or synthetically produced substance that is added to products such as foods, pharmaceuticals and cosmetic products, etc to prevent decomposition by microbial growth or by undesirable chemical changes. Preservatives allow products to remain fresh during the long span between the time of manufacture and the time the customer finishes using it.

Preservatives are needed in any product that has water in it to prevent bacteria and mold from growing in it.  That includes most lotions and crèmes, sugar or salt scrubs and liquid soaps.

**Solid bar soap, cold process and ‘melt and pour’ soaps are an exception. These soaps are also made with water but they don’t need a preservative because the pH level is too high to allow for mold or bacterial growth.**

The best time to use a soap is when it is between 2 - 12 months old, in which case the following guidelines are recommended:

* Use the freshest and highest quality ingredients possible.
* Always store your soaps in a cool, dry and dark location. Moisture should not be introduced to the soaps until they are going to be used.
* For cold process soaps, plastic storage containers and shrink wrap are not a good idea. Soap continually loses the water they were made with. If you trap that moisture in, it will settle back on to the soap and over time will cause the soap to have that 'off' smell. Not pleasant. Store your soaps loosely in cardboard boxes or on open shelves in a dry location.

Formulas that contain only **oils** and **waxes** are fairly stable on their own.  An average **balm or water free body butter** will last several months to a year before going rancid.

When water or water based ingredients are introduced to a formula it becomes fragile.  The water in these formulas will attract bacteria, mold, and other unsavory characters causing the product to become contaminated, break down, or go rancid.  This growth can pose serious health risks and unfortunately, is often invisible to the naked eye.

Extreme care must be taken when creating **fresh creams and lotions** even for personal use.  If you choose to create a lotion, cream, or other recipe that includes water without a preservative you must store it carefully and use it up within a few days to be safe or store it in the refrigerator for up to two weeks.  In order to responsibly share your product with others an effective preservative must be added.

Adding a preservative to products that may come into contact with water during use like **Sugar and Salt Scrubs** is a wise move. While the product does not contain water, the user is likely, despite your best instructions, to bring the entire jar of product into the shower with them, introducing bacteria, water, and other unwanted additives into the product when it is used.  The jar will then be sealed up until it is used again.  Meanwhile, the bacteria that have been introduced will be growing inside the jar.

An alternative is to using a preservative in oil-based scrubs or packaging the scrub in single-serve portions so that your customer will use the entire thing in one go, eliminating the dangerous situation.

Then comes the difficult situation of choosing a preservative that is both *safe* for prolonged usage and *effective* as a broad spectrum, anti-microbial preservative. You will need to make a choice based on what you have read, what you have heard, and eventually, what you can prove.

It is also important that you should understand that simply adding a preservative is not enough. After deciding which of the preservatives to use, you will need to ensure that your preservative is working and will continue to work over a long period of time.

This is generally confirmed by having your product tested by a lab, or before the lab test, you can try to do an initial test by yourself with a “check-it kit at home”.

(<http://www.makingcosmetics.com/Microbial-Test-Kit_p_949.html>

<http://www.homedepot.com/p/PurTest-Bacteria-Test-Kit-700/202708273>

<http://www.biosan.com/content/bacteria-and-fungi-test-kits>...)

Direct sunlight and UV rays, oxygen, heat, moisture and bacteria from your fingers can all be detrimental to your products. Below are several tips for protecting and preserving your preservative free formulations:

* Be sure your hands, work surface, and utensils are clean/sterile when preparing your products. This will help ensure that you do not introduce bacteria or contaminate your batch. Commercial skin care production is undertaken in extremely clean and sterile environments for this same reason.
* Store your products in dark containers or opaque packaging to keep them away from the harmful effects of sunlight.
* Ensure that your packaging is airtight. Natural products can oxidize and go rancid when exposed to air.
* Heat can also be damaging to natural products. Store products in a cupboard or other cool place.
* Because our fingers can be a host to bacteria, try to avoid dipping your fingers into your jars and bottles. Instead, use a clean spoon, toothpick, popsicle stick or other appropriate utensil to obtain the amount that you wish to use. Lotion pumps and PET bottles with turret or disc tops are wonderful for dispensing more fluid ingredients such as lotions and gels.

One of the many advantages to handcrafting your own natural products is that you can eliminate or minimize the use of harmful preservatives. Instead, you can adapt more natural methods of preserving and/or using your products.

Although the preservatives do extend the longevity of the products and help keep them free from bacteria, the preservatives themselves are often unhealthy.

Preservatives are toxic products and can lead to a number of allergic and skin reactions such as burning, unsightly rashes, flaking, and itching of the skin.
The list of dangerous preservatives is very long. I will mention just a few, which I think should be avoided:

* TEA (triethanolamine).
* PARABENS (ethyl, butyl, methyl, propyl).
* DEA (diethanolamine).
* PETROLATUM (petroleum jelly).
* PROPILENE GLYCOL.
* SODIUM LAURYL SULFATE (detergent, emulsifier and wetting agent).
* SODIUM LAURETH SULFATE (water softener, foaming agent).
* SODIUM BENZOATE (preservative).
* Polysorbates ( 20 and 80) (nonionic surfactant and emulsifier often used in bath and body products to solubilize essential oils into water-based products).

There are some wonderful choices available today and even though they are still chemically derived, they are by far a better alternative to many used commercially.

Below you will find a list:

**Grapefruit Seed Extract** - a natural broad spectrum preservative used to kill or inhibit the growth of bacteria, viruses, fungi and other nasties. It is not, in itself, a full spectrum preservative and must be used in conjunction with other broad spectrum preservatives to be effective. Note that it can be sensitizing to some individuals. When added to a soap formula, it will speed up trace considerably.

**Rosemary Extract** - an anti-oxidant that slows down oxidation of natural materials. Oil based recipes containing oils that have short shelf lives can benefit from this product. Be aware that rosemary extract smells like rosemary and may add scent to your final product. Luckily, a little goes a long way.

**Vitamin E Oil** - another anti-oxidant. Usually a mix of tocopherols blended in an oil. Try to purchase one with at lease 50% mixed tocopherols for better protection. For use in anhydrous products.

**Highest quality Essential oils**

According to Preservatives for Cosmetics by David C. Steinberg, essential oils that have demonstrated antimicrobial activity include caraway, cinnamon, clove, cumin, eucalyptus, lavender, lemon, rose, rosemary, sage, sandalwood and thyme.)

**Germaben II** - is effective at preserving water and non-water based products.  Consists of Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben.

**Germall Plus** - a broad spectrum anti-microbial preservative.  For use in n anhydrous and water based products. Consists of Propylene Glycol, Diazolidinyl Urea, Iodopropynyl Butylcarbamate

**Optiphen Plus** - a world wide approved paraben and urea free broad spectrum preservative that is effective against bacteria, yeast and moulds. Optiphen Plus also imparts emolliency to finished products making it a great addition to lotions and cream rinses.  Consists of Phenoxyethanol, Caprylyl Glycol, Sorbic Acid.

**Germaben II-E**

Germaben II-E was developed to protect formulations that contain ingredients that inactivate parabens. It is a liquid preservative system that contains 20% Germall II, 10% methylparaben, 10% propylparaben, and 60% propylene glycol.

**Liquid Germall Plus**

Liquid Germall Plus is a broad spectrum, water soluble preservative for oil-in-water and water-in-oil emulsions and water soluble formulations. It is highly effective against gram positive and gram negative bacteria, yeasts, molds and commonly found organisms.

**LiquaPar Oil**

LiquaPar Oil is a clear, liquid blend of isopropyl, isobutyl and n-butyl esters of para hydroxybenzoic acid. It is a very stable and effective preservative against gram positive and gram negative bacteria, yeast and mold.

I hope that you learned the basics about using preservatives for making skin care products. I hope this information was helpful! Preservatives are necessary for any product containing water. While bath and body products may want to keep their products as natural as possible, nothing is more unsafe than a contaminated product.

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