

The Truth About Parabens (and other Preservatives)

by Treasured Locks

People often ask us why we use preservatives in our natural products. As a manufacturer and distributor of natural products, we strive to make our products as natural as possible. However, one reality of modern life is that we need preservatives. To get a product from the manufacturer to you, through a distribution channel, and to have that product have any kind of reasonable shelf life requires that certain products be preserved, in some fashion. Otherwise, you'd shortly end up with some pretty funky stuff instead of the product you paid for. Inconvenient? Yes. But, even worse, some of those nasties that can grow in your products are harmful. Preservatives of some kind will almost always be needed in products where water is present. Water is the basis of all life, including bacteria, fungi and molds. Products without preservatives may have a short shelf life, even if refrigerated. Products that are not properly preserved, even if made in a pristine environment, can become a health risk when exposed to the yeast, mold, fungi and bacteria present in all of our homes.

Parabens are a group of broad-spectrum preservatives (meaning they kill a variety of microbes) used to prevent the growth of harmful micro-organisms, especially molds and yeast. Parabens are derived from benzoic acid. Benzoic acid is a chemical commonly found in plants. **So, to some extent, parabens are "natural"**. They are as natural as some alternative preservatives being proposed, such as grapefruit seed extract. Parabens have been used extensively for over 50 years and have been researched thoroughly. Parabens are used in very small concentrations causing absolutely no reason for concern for most people.

When we started out in this business, we heard the horror stories concerning parabens and decided to try to avoid them in the products we offer for sale. **However, the reality is there are no great alternatives.** Many of the manufacturers that offer paraben free products (or products free from other chemical preservatives) make disclaimers about the shelf lives of their products or even the safety of the products they sell without chemical preservatives. They pass the risk of not using effective preservatives on to you, the consumer.

Parabens are well tolerated by just about everyone. Extremely sensitive people may develop a mild skin reaction, in products that are not rinsed off such as lotions. This reaction is rare. The reaction is even more rare in products that are rinsed off, such as shampoos. We have to weigh the **very small risk of a mild skin rash against the serious health threat posed by spoiled products.** You may have found websites that suggest that you should avoid parabens at all costs because of increased risk of cancer. However, you should be aware of the real "threat" of parabens and what costs you may be paying by avoiding them. The controversy over parabens, like the controversy over Sodium Laurel Sulfate is a difficult one to sift through. It's not that there is any lack of opinion on the subject. It's just that you have to consider the source when you do find information. It seems almost everyone has an axe to grind when it comes to this issue.

Manufacturers that use parabens want to defend their use. That's understandable. Parabens are extremely effective in preventing the growth of some real nasties. They are easy to use and relatively inexpensive. Alternative "Natural" manufacturers want to sell you their paraben free products. So, they sometimes go to irrational extremes to vilify parabens.

You should know there is **no current evidence linking parabens and illness.** Parabens are less sensitizing to the skin than most other preservatives used in beauty products around the world. They are low in toxicity (they're food grade preservatives) and have low potential for irritation. As pointed out earlier, Parabens are derived by modifying chemicals that occur naturally in plants.

Parabens have been proven time and time again to be safe ingredients. The following is an excerpt from a report for the CTFA (the Cosmetic, Toiletry, and Fragrance Association)

Ingredient Safety and Regulations; [08/01/96] The Final Report of the CIR (Cosmetic Ingredient Review) Expert Panel for these ingredients was published in the Journal of the American College of Toxicology with a "safe as used" conclusion.

"The Parabens are esters of p-hydroxybenzoic acid (PHBA) and are used as preservatives in cosmetic formulations. Data obtained from chronic administration studies indicate that conclusion:

Parabens do not accumulate in the body.

Acute chronic and sub chronic toxicity studies in animals indicate that Parabens are practically nontoxic by various routes of administration. Co-carcinogenesis studies on Propyl and Methylparaben were negative. Parabens are practically nonirritating and nonsensitizing in the human population with normal skin. It is concluded that Methylparaben, Ethylparaben, Propylparaben, and Butylparaben are safe as cosmetic ingredients in the present practices of use. By extension, because of their similarities, the conclusion was reached that Isobutylparaben and Isopropylparaben are safe as cosmetic ingredients in the present practices of use."

The CTFA released the following statement in 1999:
08/16/99 CTFA Response Statement: Parabens

"Parabens are a class of preservatives (ingredients that help to prevent microbial contamination) that are used in a wide variety of foods, drugs, and cosmetics. They have a long history of safe use in these products, and have been specifically recognized as safe by the U.S. Food and Drug Administration. Additionally, the Cosmetic Ingredient Review Expert Panel concluded that they were safe for cosmetic use.

"As of January 2004, bodies such as the **American Cancer Society** and National Cancer Institute continued to maintain that the evidence is inadequate to conclude that any causal link between antiperspirant use and breast cancer exists."

The CTFA released this response in January, 2004 because of the persistence of the paraben rumors:

"On November 14, 2003, as part of the normal re-review process, the CIR Expert Panel determined that it wanted to conduct a thorough review of the literature since the previous report in 1984 to decide if it was appropriate to reopen the safety assessment.

The Food, Drug, and Cosmetic Act requires that cosmetics and non-prescription drugs and their individual ingredients must be safe and that labeling must be truthful and not misleading. FDA can take immediate action to stop the sale of any product that does not meet its high standards. Given the oversight by FDA, commitment of the industry, and long history of safe use, consumers can have confidence in their cosmetics and non-prescription drugs."

For the full report, visit the CTFA here: <http://tinyurl.com/8mhb2>

From the American Cancer Society:

Some rumors that have been widely circulated and the facts as pointed out by the American Cancer Society

Rumor:

The leading cause of breast cancer is the use of antiperspirant. Yes, ANTIPERSPIRANT. Most of the products out there are an antiperspirant/deodorant combination, so go home and check your labels. Deodorant is fine, antiperspirant is not.

Fact:

This is not true. There have been many extremely thorough epidemiological studies of breast cancer risk factors published in medical journals. In the January/February 2004 issue of the Journal of Applied Toxicology, British researchers reported that traces of chemicals called parabens were found in breast tumor tissue of several patients.

Parabens, preservatives used in cosmetics, shampoos, skin creams, hair gels and various food products, mimic the actions of estrogen - a hormone linked to breast cancer. However, the researchers said their study did not prove the chemicals could cause breast cancer. And the levels of parabens detected in the tumor tissues were much lower than the levels of naturally occurring estrogen in the body.

"There's going to be a far greater risk from other sources of estrogen, such as taking hormones after menopause and being overweight, because fat tissue makes estrogen," says Michael Thun, MD, the Society's vice president of epidemiology and surveillance research. "The additional risk, if it exists, would be minuscule."

"People should not worry about using antiperspirants, but the findings must be taken seriously by regulators who are responsible for assessing the safety of consumer products," said Thun.

Factors with Uncertain, Controversial, or Unproven Effect on Breast Cancer Risk Antiperspirants: Internet e-mail rumors have suggested that chemicals in underarm antiperspirants are absorbed through the skin, interfere with lymph circulation, and cause toxins to build up in the breast and eventually lead to breast cancer. There is very little experimental or epidemiological evidence to support this rumor. Chemicals in products such as antiperspirants are tested thoroughly to ensure their safety. One small study recently found trace levels of parabens (used as preservatives in antiperspirants), which have weak estrogen-like properties, in a small sample of breast cancer tumors. However, the study did not look at whether or not parabens caused the tumors. This was a preliminary finding, and more research will be needed to determine what effect, if any, parabens may have on breast cancer risk. On the other hand, a recent large epidemiological study found no increase in breast cancer in women who used underarm antiperspirants or shaved their underarms.

Rumor: "There's an increased risk of dying of cancer today. It must be all these chemicals we are using":

Fact: Many people believe that their risk for cancer is growing because cancer figures are sometimes reported out of context. The actual number of people who are diagnosed and who die of cancer each year has indeed grown--because the US population is growing larger, and is aging. With more people and more older people (who have a higher incidence of cancer), we would expect to see a larger number of cases of cancer, even if the rate of cancer (on a per person basis) remained the same. The fact is the rate of cancer is dropping.

<http://tinyurl.com/97p4f>

What about alternatives to Parabens?

Let's face it. Skin care products need preservatives. Most are kept in our bathrooms where there are hordes of unknown germs, lots of humidity and warm temperatures. This is the perfect environment for growing... well just about anything. Anything that contains water (ie. creams, gels, lotions) is a paradise for bacteria and molds, and the natural sugars in plant extracts are their favorite snack food. So, ironically, the more "natural" we make our products by including all those great plant extracts, the more they are susceptible to spoilage. Many natural substances do offer some antibacterial benefits.

Certain essential oils, like Tea Tree, and some vitamins can help reduce some forms of bacteria when used in high concentrations. But, the concentrations required for long term preservation

under less than ideal conditions put you at serious risk for skin irritation. Other natural substances are useful only against certain types of bad-guys and for limited amounts of time. Some natural care products are switching to Sodium Hydroxymethylglycinate as an alternative to parabens. Some are even going so far as to call it a “natural” preservative. While it has been proven to be extremely effective in low concentrations and to be non-harmful (making it an excellent alternative), we feel it is going a little far to call it natural just because it is derived from a naturally occurring amino acid. Again, if you’re going to call this product natural, you could call Sodium Laurel Sulfate natural.

Sodium Hydroxymethylglycinate is a broad-spectrum preservative effective against bacteria, yeast and mold. It is used at extremely low concentrations between .1% to 1% at the most. It is active at all alkaline pH levels as well as acidic conditions. Sodium Hydroxymethylglycinate is derived from glycine, which is a naturally occurring amino acid. Glycine is made up of sweet-tasting crystals; it is used as a dietary supplement and as a gastric antacid.

Sodium Hydroxymethylglycinate has been tested and found to be non-irritating, nonsensitizing, non-toxic by skin absorption and non-mutagenic (does not damage the DNA or possess the potential to damage chromosomes). As of the fall of 2004, manufacturers are still working with Sodium Hydroxymethylglycinate to determine whether it is effective enough for general use.

What about those “natural” preservatives?

Alternative #1- The Truth About Grapefruit Seed Extract

“Grapefruit Seed Extract (GSE) is an all natural preservative”: There are rumors all over the web that Grapefruit Seed Extract works as a natural preservative. We even considered using it in our products. However, the sad truth is GSE is not an all natural preservative. **GSE is no more natural than parabens.** Grapefruit seed extract is not grapefruit juice. It is also not grapefruit essential oil. Chemical manufacturers take the leftover grapefruit pulp, a waste by-product from grapefruit juice production, and in an intensive, multi-step industrial chemical process, change the natural phenolic compounds into synthetic quaternary ammonium compounds. Typically, in chemical synthesis of this type, chemical reagents and catalysts are used under extreme high heat and pressure or vacuum. Synthetic ammonium chloride is one of the chemical catalysts used in this process. So, first all, all Grapefruit Seed Extract is not “natural”. It’s a chemically altered form of grapefruit seed. If you’re going to call it Grapefruit Seed Extract, you could by the same reasoning call Sodium Lauryl Sulfate Coconut Oil Extract. Secondly, studies done on GSE have found that while it may be mildly preserving, it appears to be due to trace contaminants, rather than the GSE itself. A handmade Grapefruit Seed Extract that was not tainted with other chemicals showed zero preservative qualities. Here is one report from the Institute of Pharmacy, Ernst Moritz Arndt University, Greifswald, Germany:

“The antimicrobial efficacy as well as the content of preservative agents of six commercially grapefruit seed extracts were examined. Five of the six extracts showed a high growth-inhibiting activity against the test germs. In all of the antimicrobial active grapefruit seed extracts, the preservative benzethonium chloride was detected by thinlayer chromatography. Additionally, three extracts contained the preserving substances triclosan and methyl paraben. In only one of the grapefruit seed extracts tested no preservative agent was found. However, with this extract as well as with several selfmade extracts from seed and juiceless pulp of grapefruits (*Citrus paradisi*), no antimicrobial activity could be detected. Thus, it is concluded that the potent as well as nearly universal antimicrobial activity being attributed to grapefruit seed extract is merely due to the synthetic preservative agents contained within. Natural products with antimicrobial activity do not appear to be present.”

For more detail, visit this link: <http://tinyurl.com/8q5mv>

Alternative #2- Essential Oils

“Essential Oils will work as preservatives”: While it is true that some essential oils have antibacterial and anti-fungal properties, the quantity needed to effectively preserve a water containing product would be at unsafe levels. Care needs to be taken when using essential oils.

Alternative #3- Potassium Sorbate

“Potassium Sorbate is an all-natural preservative”: While potassium sorbate can effectively preserve against mold and yeast, it is not useful for protecting from bacteria. It is not at all effective in products with a pH over 6, which most lotions are. While potassium sorbate is found in nature, any available today would have been synthetically made so it is not all-natural. It is also believed to cause contact dermatitis.

Alternative #4- Vitamins

“Vitamins A, C & E are great for preserving all kind of things and they’re good for you” Vitamins A, C and E can extend the shelf life of products by preventing oxidation and by slowing the growth of certain bacteria. And, they are good for you. Vitamin E in particular is great for keeping oil from going rancid. But, these vitamins are not effective as broad-spectrum preservatives and cannot replace other preservatives in all products. Think about, orange juice is loaded with Vitamin C. But, would you want to drink a glass that was left in your bathroom for a couple of months?

Conclusion

Unfortunately there are no effective all-natural preservatives. And, preservatives are necessary. Unless we want to accept very short shelf lives and/or start keeping all of our products, in a cool, dark place, we are going to have to use preservatives in some products. While it would be great if **a “natural” alternative existed, the truth is there isn’t one that is effective enough.** To keep certain types of products free of bacteria, mold and yeast and to make it a product that is safe for your use, a chemical preservative is necessary. We will continue to follow the research in this area. But, in the meanwhile, **Parabens are highly effective and have been proven time and time to be safe for most people. Their benefits (including health benefits of preventing disease) far outweigh any risks associated with their use.**