**What is a Phototoxic Essential Oil?**

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"What does phototoxic mean? I had a customer ask if my lotion contained any essential oils that were phototoxic? I’m always careful to understand all of my ingredients...but I didn’t have a good answer for her. Does it matter in soap as well or just lotion?"

**Answer:** Great question. Essential oils are amazingly wonderful things - powerful and complex. And just because something is naturally derived, doesn’t mean it’s safe on your skin.

Phototoxicity, sometimes referred to as photo sensitivity, refers to constituents in the essential oil that absorb sunlight intensely...in effect, increasing or focusing the effect of the sun on your skin. It’s a constituent of the essential oil called a furanocoumarins that causes this. (Note: It’s also furanocoumarins that make drinking grapefruit juice problematic with some medicines.)

If these phototoxic essential oils, and/or products containing them, are left on the skin and then exposed to sunlight, they can cause the sun’s effect to be greatly magnified.

This mostly applies to products that are going to stay on the skin - “leave-on” products like lotions, lip balms, perfumes etc. In soaps, in which the product is rinsed off, so little of the essential oil remains behind on the skin that I’ve never heard of it being a problem.

Bergamot is perhaps the most well known phototoxic essential oil. It contains a furocoumarin called bergaptene. Lucky for us, there are bergaptene-free oils that can be used in “leave-on” products. Other cold pressed (not steam distilled) citrus essential oils (like lemon or lime) can be phototoxic as well. But *folded* oils, like 5-fold orange have had much of the terpenes removed, so they are much less phototoxic.

**Definition:** A "folded" (multiple micro-distillations) essential oil is an essential oil that has been further distilled and concentrated from its already highly concentrated form. Citrus oils (like orange, lemon, grapefruit, lime, tangerine, blood-orange, mandarin, and bergamot) are the most commonly found in “folded” versions, and the most common "folds" are 5-fold and 10-fold.

The main benefits of using a folded oil are:

- They are more concentrated/stronger oils.
- They are more likely to be "purer" scents - more closely resembling the fruit/plant that they were distilled from. Often they are called "sweeter" "juicier" or "bolder."
- The terpenes that are removed as part of the distillation process are more volatile and prone to oxidation. Since the terpenes have been removed, the essential oils will last longer, both in your soaps or candles and in the bottle.
- The terpenes are also what make the essential oils phototoxic (causing sensitivity to the sun). This is not a problem for soap, since it is a "rinse-off" product. But in "leave-on" applications like lotions and lip balms, you don't want to use phototoxic essential oils. Since the terpenes are removed as part of the process, folded citrus oils are o.k. for use in "leave-on" applications like lotions and lip-balms. (*Because each distiller and manufacturer may have different processes for distillation, be sure to verify this with your essential oil vendor, though.*)
- Because the distillation is a physical, not a chemical, process, you don't lose any of the "natural" claims on your products.

So, as you can see, the folded essential oils are just stronger, purer, but still natural, versions of the originals, and make good choices for usage in candles, soaps and bath & body products.