

## SPOTLIGHT: ANTIOXIDANTS SAVE THE DAY!



### TOCOPHEROLS: A NATURAL WAY TO KEEP ORGANIC PRODUCTS FRESH

Tocopherols are a family of vitamin E compounds naturally found in vegetable oils, nuts, fish, leafy green and yellow vegetables. They are usually present in these foods as mixtures of different forms: alpha-, beta-, gamma-, and delta-Tocopherol. The alpha form has the same biological activity as Vitamin E. The gamma- and delta-tocopherol forms are known as the antioxidant superheroes that prevent the rancidity of many foods and personal care products containing oils and fats. They also provide awesome protection for your skin when included in body care products.

The term “rancidity” is used to describe a condition that is caused by the exposure of fat to oxygen or water. For example, when the fats in a cooking oil or lotion are exposed to oxygen, portions of the fat (the poly-unsaturated fatty acid portions) react and form peroxides, which decompose and turn into a mix of rancid or unpleasant odors and flavors. A similar reaction occurs between fat and water when portions of the fat chemically react with water, and free fatty acids are released.

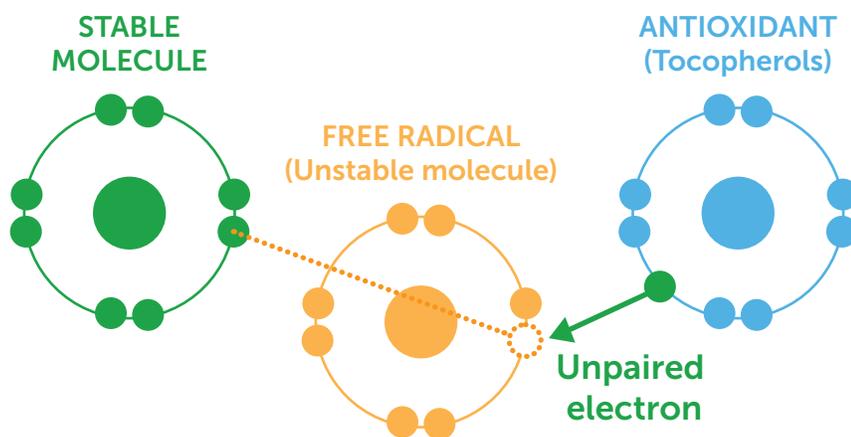
Natural tocopherols are an important tool used in organic foods and body care products to help maintain the freshness and shelf life of the products containing fats and oils. They are the most effective and the only comparable natural alternative to synthetic antioxidants such as BHT, BHA and propyl gallate. They work by neutralizing unstable molecules known as free radicals. A free radical is an atom or molecule with an unpaired electron. They are unstable and highly reactive as they roam around actively stealing electrons from other molecules. Antioxidants, on the other hand, have an extra electron that they are able to donate to the seeking free radicals and to replace any lost during oxidation. While free radicals aim to increase their number, antioxidants such as the tocopherols stop the recruitment. Since the antioxidants are stable without this extra electron, all is good in the world—the antioxidants have saved the day.

### ANTIOXIDANTS SAVE THE DAY

#### Tocopherols: A natural way to keep organic products fresh

#### Did You Know?

Tocopherols help to maintain the freshness of organic products that contain fats and oils. They are the most effective natural alternative to synthetic antioxidants.



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**Joke:** An antioxidant walks into an organic vegetable oil bar and sits down next to a free radical. The antioxidant says, “Hey there, what’s a free radical like you doing in a bottle of organic oil like this?” The free radical starts bouncing around and screaming, “Looking for my long lost electron, can you help?” The antioxidant responds, “Settle down, you are so reactive. I just happen to have an extra one, so let me save the day and stabilize you!”