

ROSEMARY OLEORESIN

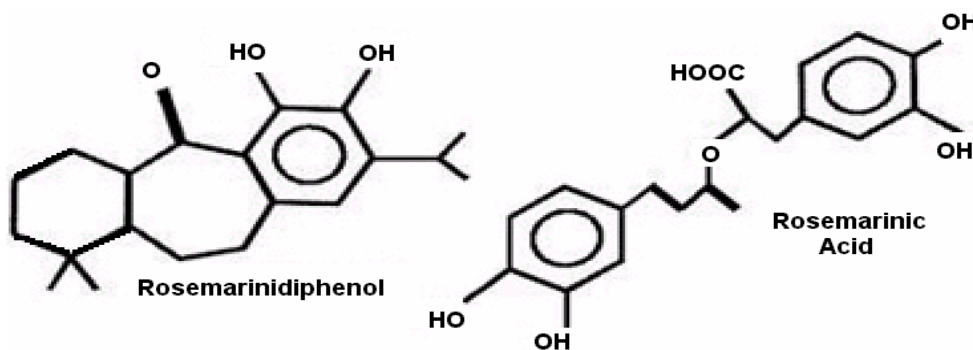
Slowing rancidity is an important consideration in the processing and preparation of many Cosmetic and Personal Care products. Since any product that contains oils, fats and or other natural ingredients are susceptible to rancidity, manufacturers often need to use antioxidants to increase product stability.

Rosemary extracts have historically been used to enhance flavor and to inhibit oxidative deterioration in foods, fats and oils. Oxidation is a chain reaction, propagated by highly reactive free radicals generated during the initial oxidation stage. These free radicals react within the system to form compounds which cause off odors and overall quality deterioration.

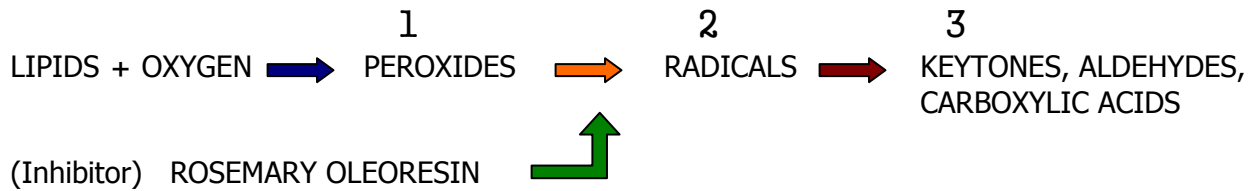
Typically, Rosemary Oleoresin, one of the most powerful of natural antioxidants, has demonstrated other significant abilities. Rosemary Oleoresin has been documented to fight bacterial and fungal infections. Due to the high levels of Rosmarinic Acid, Carnosic Acid and Carnosol found in Rosemary it has documented anti-inflammatory properties, as well as behave as an analgesic and a stimulant to the skin. As a free radical scavenger, Rosemary is extremely effective at inhibiting Peroxynitrate, a cytotoxicant with strong oxidizing properties toward various cellular constituents, including lipids, amino acids and nucleotides and can cause cell death, lipid peroxidation, carcinogenesis and aging.

DESCRIPTION

Rosemary Oleoresin is a purified extract of rosemary from which nearly all of the characteristic rosemary odor and flavor have been removed, leaving a faint herbal note, which is usually absent at levels used in final applications. Rosemary Oleoresin contains a series of natural compounds, present in the rosemary plant (*rosmarinus officinalis*), whose antioxidative properties retard the oxidation of lipids. Two of the compounds are rosmarinic acid and rosmarinidiphenol.



These substances work as inhibitors in the oxidation reaction chain of lipids

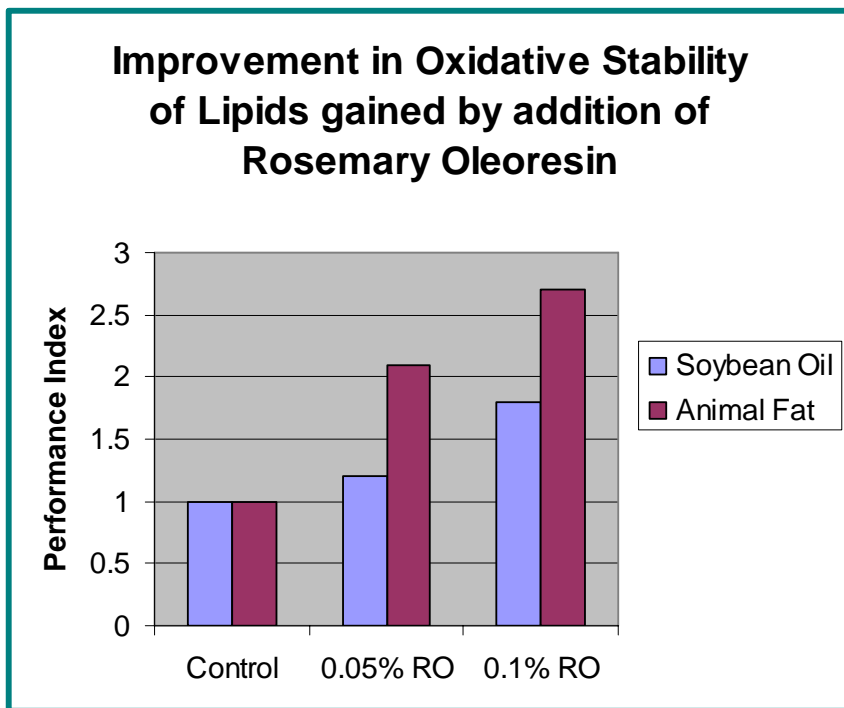


Along with other components, rosmarinic acid and rosmaridiphenol make [reaction 2] reversible, slowing the oxidation of fats and lipids by donating hydrogen atoms to the radicals. Thus the radicals are stabilized, preventing [reaction 3] from occurring and the rancidity compounds from developing.

APPLICATIONS

Rosemary Oleoresin may be used in most any application where lipid oxidation is a concern.

- retards rancidity in fats and oils
- helps protect carotenoidic pigments and essential oils from oxidation
- slow product degradation
- deters growth of gram-positive bacteria



Stability is determined by an OSI Instrument at 110° (The OSI induction time of the fortified sample divided by the OSI induction time of the Control).

RECOMMENDED usage levels are 0.10 to 0.40%. Usage levels vary in relation to the oil content of the finished product.