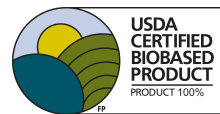


## RADIGARD™

### MULTIFUNCTIONAL NATURAL ANTIOXIDANT



#### PRODUCT DESCRIPTION

Inspired by the power of nature, Green Line's Radigard™ product line utilizes the unique chemistry of the rosemary herb to help protect your cosmetic formulations from oxidation.

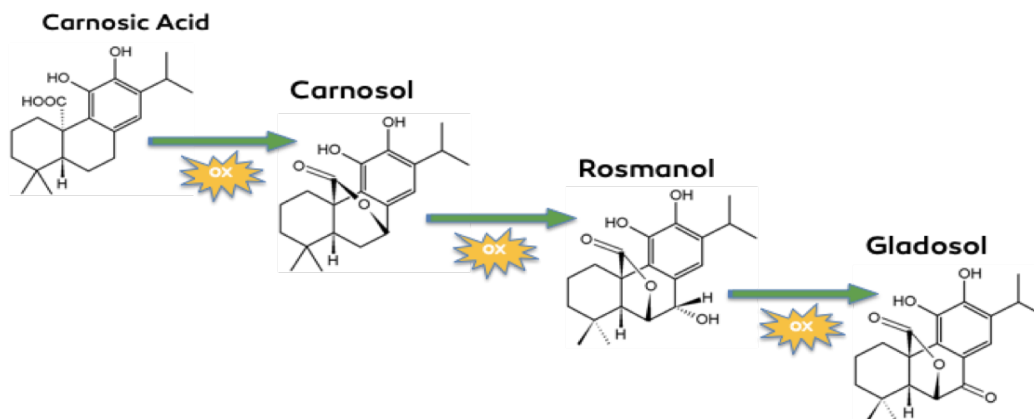
A notable member of the mint family, rosemary (sometimes also known as anthos, the Greek word meaning "flower") and its derivatives have long enjoyed immense popularity within many industries. The plant's powerful phytochemistry has made it an excellent ingredient in formulations, and there is speculation that it may have medicinal properties as well. Studies throughout the years have shown the presence and activity of antioxidant compounds in the rosemary leaf, which has significant applications when incorporated into cosmetic and personal care products.

Green Line's™ Radigards™ feature a unique botanical antioxidant from a specially refined extract of *Rosmarinus officinalis* (rosemary) leaves. This extract provides reliable oxidation protection for a wide range of oils, and can serve as an alternative to soy based tocopherol in cosmetic formulations.

Trade Name	Oil Carrier	INCI Name
Radigard™ SN-R	Sunflower oil	Helianthus Annuus (Sunflower) Seed Oil, Rosmarinus Officinalis (Rosemary) Leaf Extract
Radigard™ SF-R	Safflower oil	Carthamus Tinctorius (Safflower) Seed Oil, Rosmarinus Officinalis (Rosemary) Leaf Extract
Organic Radigard™ CO-R	Organic canola oil	Canola Oil, Rosmarinus Officinalis (Rosemary) Leaf Extract
Radigard™ CT-R	Caprylic/capric triglyceride	Caprylic/Capric Triglyceride, Rosmarinus Officinalis (Rosemary) Leaf Extract

#### PRODUCT FUNCTION

Radigard™ provides the oil phase of your formulation with multiple layers of protection from oxidation through a carnolic acid oxidation cascade - carnolic acid is able to be sacrificially oxidized three times (first to carnosol, then rosmanol, and finally to gladosol), thus offering heightened stability to cosmetic formulations and extension of their shelf lives.



# RADIGARD™

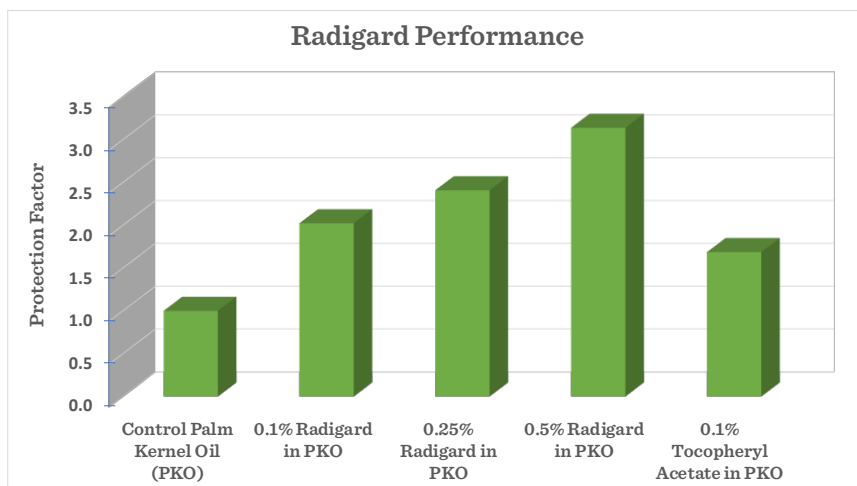
## MULTIFUNCTIONAL NATURAL ANTIOXIDANT

### KEY BENEFITS—

- 100% Naturally Derived
- Preservative Free
- Low Use Level
- Low Odor
- Oil Dispersible
- Multi-functional
- Efficient & Convenient
- Easy to Incorporate
- Eco-Friendly Ingredient List
- Ideal for All Product Categories
- Alternative to Soy Based Materials



### PRODUCT PERFORMANCE—



**SHELF LIFE—** 12 months

**PACKAGING—** 5 kg pail, 18 kg pail, and 180 kg drum

### GENERAL GUIDELINES—

#### RECOMMENDATION

Use Level 0.1 - 0.5% (minimum of 0.5% of oil phase)

Temperature Range Add at < 60 °C

#### Procedure

Add **RADIGARD™** to oil phase and incorporate by mixing.

#### FORMULATING TIPS

- Mineral sunscreens can shift color
- Minimum 0.5% per 100% oil
- Best below pH of 7.0
- Stable up to 85 °C