

### SUNSHINE FACTOR® CHARACTERISTICS

Slip melting point	65°F (18°C)
Color (Lovibond red 5¼" cell)	White ≤ 4.0
Taste/smell	Neutral
Shelf life	18 months
Free fatty acids % palmitic	≤ 1.0
Peroxide value (mEq/kg)	≤ 6.0
Saturated fat	46%
Monounsaturated fat	42%
Polyunsaturated fat	12%
Smoke point	446°F (230°C)
Flash point	617°F (325°C)
Uses	Consumable, cooking

### ANTIOXIDANT LEVELS OF VITAMIN E COMPLEX IN SUNSHINE FACTOR® (Tocopherol & Tocotrienol)

Tocopherol	mg/kg
α - tocopherol	211.0
α - tocotrienol	237.6
β - tocopherol	181.2
γ - tocopherol	13.7
γ - tocotrienol	291.3
δ - tocotrienol	43.4
<b>Total</b>	<b>978.2</b>

\*Vitamin E is a generic name referring to alpha tocopherol

### NUTRITIONAL VALUES (100 G)

Energy	867 kcal
Carbohydrate	0 g
Protein	0 g
Total fat	100 g
Saturates	47 g
Cholesterol	0 g
Fiber	0 g
Calcium	0 g
Iron	0 g
Sodium	0 g

Values are typical, for general information only, and are not to be construed as specifications. All descriptions, suggestions, and typical values supplied above are believed to be reliable, but Zoological Education Network shall incur no liability by reason of inaccuracies or omissions in this information. Purchaser assumes sole responsibility for ensuring that product supplied by Zoological Education Network is used in conformity with all applicable laws and regulations.



Sunshine Factor®



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# All Red Palm Oil is Not the Same



### HEALx/AVI Sunshine Factor® Red Palm Fruit Oil

- Made from the palm fruit, not the kernel
- 100% USDA certified organic
- Bottled in glass containers
- Sustainable agricultural
- Fair trade products

## What is the Difference?

### FRUIT OIL VS. KERNEL OIL

Sunshine Factor® is red palm oil, but it is made from the palm *fruit*, not the kernel. Each red palm tree yields more palm kernel oil than fruit oil, which makes the fruit oil more valuable. Many lesser quality red palm oil products are diluted with the more abundant red palm *kernel* oil. Palm kernel oils do not have the same beneficial properties and will not yield the same health benefits for pets as Sunshine Factor®.



### CERTIFIED ORGANIC

Sunshine Factor® is 100% certified organic by QAI, which means no pesticides, preservatives or other contaminants were used in growing or processing. Organic farming also helps sustain a healthy planet. We import certified organic red palm fruit oil in compliance with *human* quality consumption importation standards (the very highest). Sunshine Factor® is also naturally-derived using only steam and a mechanical press; no chemical solvents are used in any stage of production.



### GLASS VS. PLASTIC

Sunshine Factor® is thoroughly tested for freshness and purity and shipped to our USDA-approved certified organic bottling facility, where it is bottled in glass containers in accordance with the USDA organic bottling standards. Bottling in glass helps avoid contamination issues and preserves freshness. The oil becomes liquid at 80°F (27°C), and melting is sometimes recommended for proper dosing. Therefore, we specifically do not use plastic containers, as plastic toxins may leach out and be absorbed into the oil during heating.



### SUSTAINABLE AGRICULTURE

Sunshine Factor® is a sustainable agricultural product grown on long established farms in Brazil (in accordance with USDA Certified Organic Standards),



not harvested from tropical rainforests in other locations like Malaysia, Indonesia or Africa (where burning for new plantations continues to add to the destruction of tropical rainforests and threaten endangered wildlife). Our farms are a member of the Northern Plains Sustainable Agricultural Society and the Roundtable on Sustainable Palm Oil (RSPO). They are also certified by TransFair USA as a Fair Trade program, where workers are paid a fair wage.

## Sunshine Factor®

### PRODUCT DESCRIPTION

This oil is extracted from the pulp of the fruit of the palm tree *Elaeis guineensis*. The palm trees are organically cultivated and the oil is physically extracted by mechanical pressing without the use of solvents or other chemical substances. Due to the natural antioxidants (tocotrienols) and their low content of linolenic acid (C18:3), this oil is very stable to oxidation. It is semi-solid at ambient temperature. Sometimes a phase separation occurs, which is due to its typical composition, with approximately 50% saturated fatty acids, 40% monounsaturated fatty acids and 10% polyunsaturated fatty acids.

### TOCOPHEROLS AND TOCOTRIENOLS

Vitamin E is best thought of as a vitamin complex consisting of two therapeutic groups of compounds with vitamin E activity: tocopherols and tocotrienols. Each group comprises four different isomers—alpha, beta, gamma and delta—each of which has a different biological activity and potential therapeutic benefit. Tocopherols are present in most vegetable oils and are more common in the diet

than tocotrienols, which are found at relatively high concentrations in oil extracted from the fruit of the palm tree. Tocotrienols have significantly better antioxidant capabilities than tocopherols. The primary function of vitamin E is to defend cell membranes from oxidation and the superior protective value of tocotrienols isomers over their tocopherol counterparts is due to better uptake into the cell membranes.<sup>1</sup>

### BENEFITS/INDICATIONS

- May benefit the animal's integument, ocular, cardiac and immune systems by strengthening the overall nutritional status
- May improve the animal's energy level, particularly in geriatric patients
- Beneficial for all aspects of the skin and coat/plumage, including dry skin and brittle or dull hair or feathers
- Has a high antioxidant content (tocopherol and tocotrienol activity of vitamin E) and high carotenoid content (precursor to vitamin A)
- Contains a good balance of fatty acids
- May improve the effectiveness of nonsteroidal anti-inflammatory drugs
- May contribute to decreased risk of chronic diseases
- A vegetable oil that is more stable than flax oil
- Easy to administer; animals like the taste
- Kosher certified

Individual results may vary. This product is not intended to diagnose, treat, cure, or prevent any disease.

### PACKAGING AND STORAGE

Sunshine Factor® can be stored in the refrigerator after opening and should be kept away from strong odors and direct sunlight. The shelf life is 18 months after production.

### References and Further Reading

1. Theriault A, Chao J, et al. Tocotrienol: A review of its therapeutic potential. *Clin Biochem* 32(5):309-319, 1999.
2. Sundram K, Sambanthamurthi R, Tan YA: Palm fruit chemistry and nutrition. *Asia Pac J Clin Nutr.* 12(3):355-62, 2003.
3. Boateng J, Verghese M, Chawan CB, et al: Red palm oil suppresses the formation of azoxymethane (AOM) induced aberrant crypt foci (ACF) in Fisher 344 male rats. *Food Chem Toxicol.* Oct;44(10):1667-73, 2006.