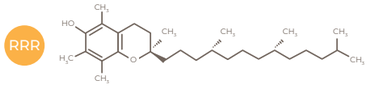
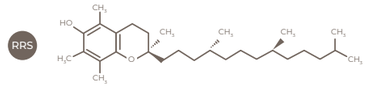
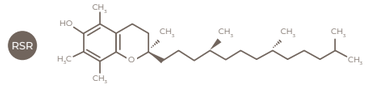
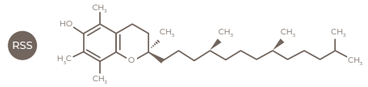
Different Stereoisomers of α-Tocopherol

Natural — **Most Active**


RRR — **Most Active**

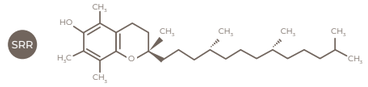

RRS — **Less Active**

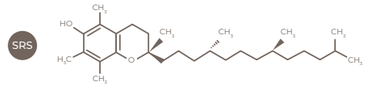

RSR — **Less Active**

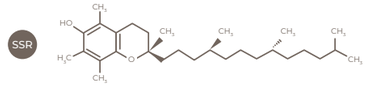

RSS — **No Activity**

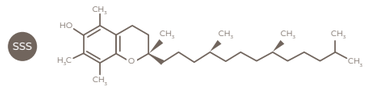
Synthetic

4/8 Less Active
3/8 No Activity
1/8 Most Activity


SRR — **Less Active**


SRS — **No Activity**


SSR — **No Activity**


SSS — **No Activity**

Higher Bioavailability

Natural Vitamin E exhibits much higher bioavailability than synthetic Vitamin E. Studies have demonstrated that the plasma appearance of tocopherol—which is evidence that it is entering the bloodstream—occurs only after passage through the liver. This is done by the hepatic α-tocopherol transfer protein (α-TTP), which not only specifically sorts out the α form of all tocopherols but also has a preference for RRR-epimer.

Recently, the bio-efficiency of Sun E has proven to be at least twice as potent as synthetic Vitamin E. Research also shows a greater accumulation of α-tocopherol in all tissues when RRR form is supplied, providing greater health protection.

We look forward to showing how we make a difference.
Visit us at **KensingSolutions.com** or email **CustomerCare@KensingSolutions.com**

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Sun E

KENSING™

Sunflower Vitamin E—Fortification with a Clean Label

As consumers demand healthier and more natural products, Vitamin E has become one of the most sought-after ingredients in today's nutrition market. As the major fat-soluble antioxidant in the human body, Vitamin E has been shown to protect the human body from the damaging effects of free radicals and the chronic diseases linked to them.

Because clinical studies have determined that natural Vitamin E is twice as potent as synthetic forms, natural Vitamin E has become the benchmark for use in leading consumer products. Since the body cannot synthesize it, Vitamin E must be included in the diet via food or supplements.

Compared to other vegetable oil sources, sunflowers are rich in RRR-alpha-tocopherol, one of four forms of tocopherol produced in nature, and one of the prime sources of all-natural Vitamin E. Sun E requires no chemical alteration, has non-GMO status, and requires no allergen labeling. It is a completely natural, non-chemically modified form of Vitamin E.

Sun E Highlights

- All-natural RRR-alpha-tocopherol
- Twice as potent as its synthetic form
- Purified via physical separation only
- Non-GMO origin is guaranteed
- No allergen labeling is required

The Only All-Natural Source of Vitamin E

Sunflower naturally has an RRR-alpha-tocopherol concentration of over 90% of the total tocopherols, making it the perfect source for high-concentration, all-natural Vitamin E. Unlike other forms of Vitamin E that claim to be “naturally sourced,” Sun E can make a natural claim as it’s produced only by physical process.

In comparison, most commercial tocopherols are typically sourced from soybean oil despite RRR-alpha-tocopherol concentrations of only 10% in the seed. This necessitates the need to convert non-alpha tocopherols (beta, gamma, and delta) into alpha-tocopherol through a chemical process. Such processes are not needed to produce Sun E.

Typical Applications

- Nutritional supplements
- Fortified foods and beverages
- Pet food and feed

Guaranteed Non-GMO

Sunflower remains a GMO-free crop worldwide, guaranteeing that any product derived from it will not have undergone genetic modification. This distinction is growing in importance as global consumers are becoming increasingly opposed to GMO products in their food, concerned that there may be unknown effects on human health.

Allergen-Free Labeling

Food allergies are becoming increasingly diagnosed among urban populations in particular. Most food allergies are linked to a handful of foods, including nuts, milk, eggs, wheat, fish, shellfish, and soy. Sunflower is broadly considered allergy-safe, showing only rare cases of sensitivity. Products containing sunflower typically do not require specific allergen labeling, making them the preferred sources for several vital ingredients and additives like Vitamin E.

Improved Bioactivity

α-Tocopherol, the most powerful form of tocopherols, can present eight different stereoisomers, depending on the spatial location of the chiral centers. Natural Vitamin E contains only the RRR form, while synthetic Vitamin E consists of all eight possible stereoisomers.

These forms are not bioequivalent:
The human body can only process those containing the 2R combination. The rest (2S forms) are not biologically active. As a result, RRR-alpha- tocopherol, or natural Vitamin E, is the most active by a substantial margin.

Sunflower Products From Kensing

- Sun E Range
- Sun E 1000
- Sun E 900
- Sun E 500 PS
- Sun E 450 SD