

Formulation Guidance

Sun E 1000 OC is recommended to be used as an active ingredient in anti-ageing skin care or UV-protecting products. Sun E 1000 OC dissolves well in oils and therefore shall be incorporated into the oil phase prior to the emulsification process. Depending on the application use levels between 0,1 – 1,0% are recommended ranging from 0,1 –0,5% in products of daily use up to 1,0% for UV protecting products or after sun applications.

Preperation


- Prepare Phase A by heating water to 70°C and adding pre-dispersed Carbopol Ultrez 21 in Neutral Oil. Homogenize Phase A for 15 minutes.
- Add Simulgel to Phase A.
- Predisperse Hyaluronic Acid and Hyaluronic Acid Na-Salt in Propanediol.
- Predisperse Oligohyaferre in Dermosoft OMP.
- Add both predisperions under stirring to Phase A. Finally add Squalane under stirring and homogenize for 10 min.
- Cool down Phase AB to 40°C.
- Add components of Phase C and homogenize for 5t max. shear rate.
- Cool down to room temperature and adjust pH to 6,0 under addition of D.


Characterization	
Appearance	Slightly Yellowish-Greenish Gel Emulsion
pH (20°C)	6,0
Viscosity (Brookfield, Spindle 5, 10 rpm)	18000 mPas

Stability	
Centrifugation (4000 rpm, 10 min)	O.K.
Microbiological Challenge Test	O.K.
Stability, 3 months, 6°C, RT, 40°C	O.K.

Product Description:

Cooling Gel Emulsion

Contains valuable skin actives such as  **Sun E** hyaluronic acid and green tea extracts.

Phase	Ingredient	INCI	%
A	Water, demin	Aqua	87,12
	Miglyol 812	Caprylic Capric Triglyceride	1,50
	Carbopol Ultrez 21)	Acrylates/C10-30 Alkyl Acrylate Crosspolymer	0,45
B	Cosphaderm Propanediol natural	Propanediol	2,50
	Simulgel EPG	Caprylyl/Capryl Glucoside, Sorbitan Oleate, Polyisobutene, Sodium Acrylate/Sodium Acryloyldimethyl Taurate Copolymer	1,50
	Hyaluronic Acid VLMV (HyActive) powder, 10-50 kD	Sodium Hyaluronate	0,20
	Hyaluronic Acid Na-Salt, 1,5-1,8 MD	Sodium Hyaluronate	0,15
	OligoHyaferre (<5 kDa)	Hydrolyzed Sodiiium Hyaluronate	0,10
	Dermosoft OMP	Methylpropandiol, Caprylyl Glycol, Phenylpropanol	3,00
C	Squalan veg.	Squalane	1,50
	 Sun E ® 1000 OC	Tocopherol	0,50
	Cosphaderm EGCg ECONAT	Camellia Sinensis Leaf Extract	0,20
D	Sodium Hydroxide 10%	Sodium Hydroxide	1,28
			100,00

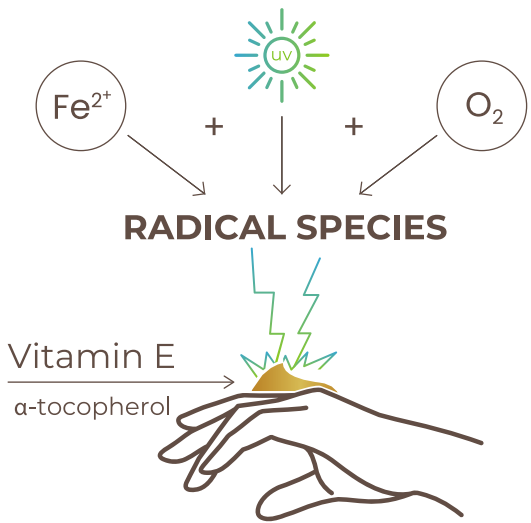


The Risk Factor of Radical Oxygen Species (ROS)

Two Risk Factors for the Skin

Inside human skin, radical oxygen species can attack biomolecules, leading to the impairment of their biological function. Radical oxidation reactions can trigger micro-inflammation, which in turn can contribute to premature aging of the skin, manifesting as visible signs of aging.

In the context of cosmetic formulations, ingredients that help prevent the harmful effects of radical oxygen species are essential tools for formulators. These ingredients are incorporated in formulations to mitigate oxidative stress and protect the skin from premature aging caused by radical oxidation reactions.



The Protective and Well-Established Effect of Vitamin E

Sunflower-Derived Tocopherols for the Skin

RRR-α-Tocopherol, commonly known as natural Vitamin E, exhibits protective properties against radical oxygen species. This property leads to its integration into cell membranes by nature. This allows it to serve as a protective shield against oxidation-induced functional loss. However, Vitamin E is prone to rapid consumption and requires regeneration. Within the skin's physiological environment, this regeneration process is facilitated by vitamins and other biomolecules.

Pure RRR-α-tocopherol is well known for its protective properties against aging effects and UV-induced damage. However, as the skin ages, its natural vitamin levels decline, underscoring the importance of external supplementation of RRR-α-tocopherol to maintain the skin's antioxidant capacity.

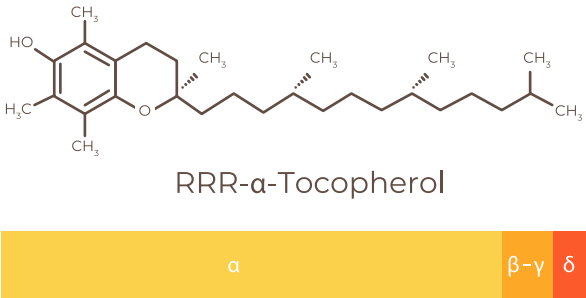
Sunflower-Sourced Vitamin E

Sunflower oil stands out among vegetable oils due to its high RRR-α-tocopherol content. This high concentration ensures that the molecule can be extracted from the oil without chemical modification. Kensing’s Sun E leverages this natural property, to offer pure and unadulterated RRR-α-tocopherol for skincare applications.

While plant-derived tocopherols vary in their composition of α, β, γ, and δ tocopherol, with many plant oils like soy containing predominantly non-alpha tocopherols (approximately 80%), the conversion into RRR-α-tocopherol often requires chemical processes. In contrast, our Sun E 1000 OC derived from sunflower oil boasts a natural RRR-α-tocopherol content of over 90%, obviating the need for chemical interventions in obtaining RRR-α-tocopherol from sunflower sources. This approach aligns with our biotechnological ethos and environmentally conscious practices.

Natural Mixed Tocopherols: Active Substance; Vegetable
INCI: Tocopherol - Helianthus Annuus (Sunflower) Seed Oil

Non-GMO Source: Sunflower-source
Label: Clean Label, Non-Soy
Process: No Chemical Modification
Allergens: Non-Allergenic Origins



Lowering Our Environmental Impact

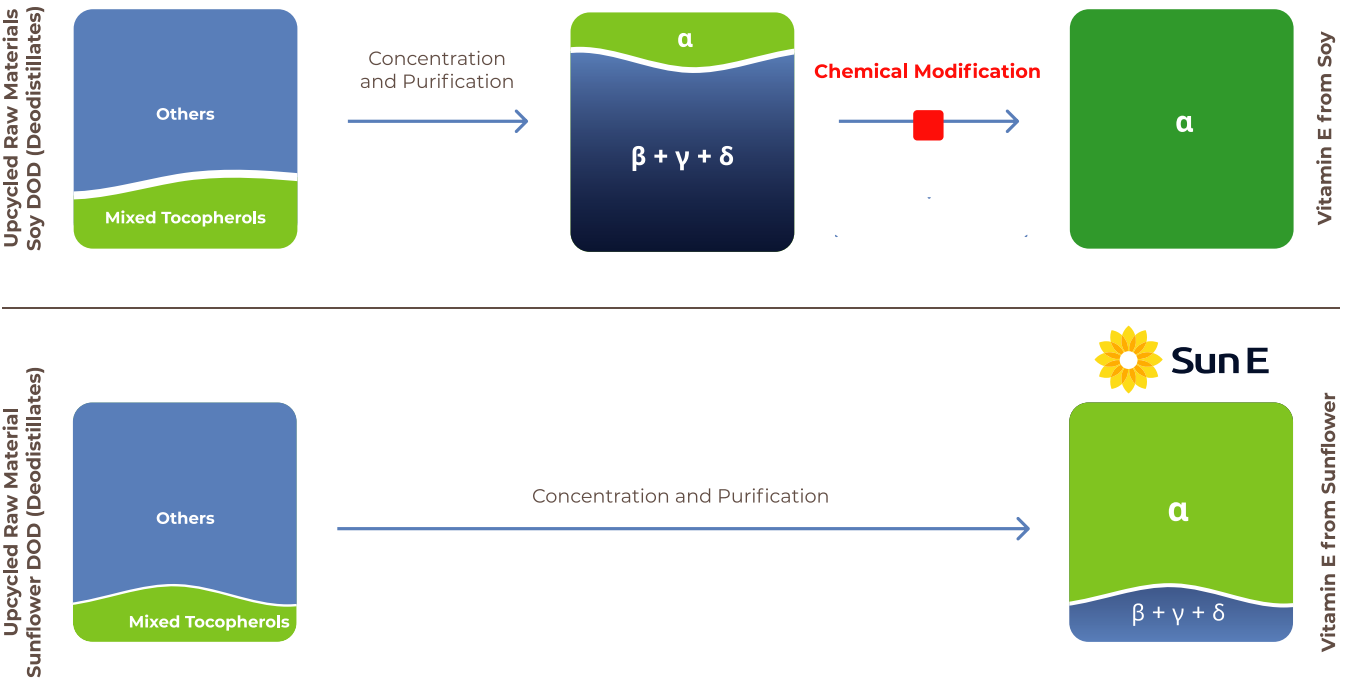
Our tocopherols are produced as valuable by-products sourced from a side stream of the vegetable oil industry eliminating the need for additional farming. This approach not only reduces waste but also minimizes our environmental impact. Our strategic proximity to suppliers and customers further enables us to streamline production and distribution, contributing to a lower environmental footprint.

Our commitment to 100% EU agriculture, coupled with sustainable agricultural practices, ensures the high quality of the plants used in our processes. In addition, all secondary stream products from our processing are directed to industries that recycle and repurpose these materials for various finished goods, promoting a circular economy model.

Plant derived Tocopherols vary in their amount and composition of -α, -β, -γ and -δ Tocopherol. In many plant oils like soy non-α-Tocopherols are dominant with a content of approx. 80%.

Their conversion into RRR-α-tocopherol involves chemical processes.

In Sun E 1000 OC deriving from sunflower oil, however, more than 90% of the naturally present Tocopherols consist of RRR-α-tocopherol. Therefore, no chemical processes are required to obtain RRR-α-tocopherol from sunflower.



Regulatory Information

EU Cosmetic Legislation (Reg. EC 1223/2009)

Compliance statement available. Fragrance allergen statement available. CMR statement available. Product has not been tested on animals by or on behalf of Kensing.

EU Chemical Legislation (Reg. EC 1907/2006)

REACH statement available. PBT/vPvB information available. SVHC statement available. Produced according GMP, Codex Alimentarius. FSSC 22000 certified. ICH Q7 GMP compliant. Please ask for our Regulatory statement for further information on the global registration status of the product.

Specifications

INCI: Tocopherol; Helianthus annuus (Sunflower) seed oil
Appearance: Clear amber to reddish viscous liquid
Cosmetic Function: Anti-ageing active
Assay: Min. 67.1% d-α-tocopherol
Origin: Vegetable; sunflower
Use Level: 0,1–1,0%
Regulatory: Status Europe, US, Japan, China, Australia, Canada
Certifications: Cosmos, Ecocert, USDA
Shelf Life: 36 months

Packaging and Storage

Available in 9 kg & 18 kg HDPE jerrycans, or 190 kg metal drums.

SUN E 1000 OC shall be stored in sealed containers, at room temperature and dry conditions, given that the product is sensitive to light, oxygen, high temperatures or alkaline environment. Keep the container tightly closed; once opened use the content quickly.

If stored appropriately in unopened containers SUN E 1000 OC has a shelf life of 36 months.