

TECHNICAL DATA SHEET

Product name: Tocopherols T-50 (Mixture of alpha, beta, gamma, delta tocopherols in soybean oil)

INCI name: Tocopherol mix

CAS: 59-02-9, 16698-35-4, 54-28-4, 119-13-1, 1406-66-2

Chemical classification: Mixture (heterocyclic compounds)

Functional category: Active ingredient (vitamin mixture), antioxidant

Country of origin: EU/China

Description: Tocopherols T-50 is a natural mixture of different tocopherols obtained from edible oils. It contains 14% d- α -tocopherol, 2% d- β -tocopherol, 60% d- γ -tocopherol, and 24% d- δ -tocopherol. Alpha-tocopherol (d- α -tocopherol) is the most active form of vitamin E, known for its powerful antioxidant properties. This form of vitamin E protects cells from oxidative stress caused by free radicals, which can damage cell membranes, proteins, and DNA, leading to accelerated aging and increased risk of chronic diseases. Alpha-tocopherol helps neutralize free radicals, slowing aging processes and contributing to overall skin health.

Beta-tocopherol (d- β -tocopherol) has antioxidant properties, though less pronounced compared to alpha-tocopherol. Its presence in the mixture enhances the overall antioxidant capacity, providing additional cellular protection. This form of vitamin E helps maintain cellular membrane integrity and reduce oxidative stress-induced damage.

Gamma-tocopherol (d- γ -tocopherol) is noted for its unique anti-inflammatory properties. Besides neutralizing free radicals, gamma-tocopherol can neutralize specific types of reactive nitrogen species that alpha-tocopherol cannot. This property is particularly useful in reducing inflammation, improving skin health, and protecting against the harmful effects of environmental pollutants.

Delta-tocopherol (d- δ -tocopherol) has very strong antioxidant properties and can inhibit the formation of certain types of free radicals, further protecting cells from oxidative stress. The combination of delta-tocopherol with other forms of vitamin E in this mixture enhances the overall protective power, making it more effective in maintaining skin health and reducing the risk of chronic diseases.

This mixture provides a broad spectrum of skin protection and care: it protects against

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

TECHNICAL DATA SHEET

UV damage, improves skin hydration and elasticity, reduces signs of aging, and alleviates inflammation and irritation. Tocopherols T-50 appear as a liquid, slightly brown to reddish in color, with a mild odor and taste. The product is soluble in alcohol and oils but practically insoluble in water.

Benefits:

- Hydrates skin, strengthens the skin barrier, and protects against oxidative damage. Prevents and corrects signs of skin aging. Used for correcting hyperpigmentation and age spots.
- Used as an additional ingredient in skin whitening products.
- Provides protection against the phototoxic effects of UVA rays on the skin.
- Besides its direct effects on the skin, the Tocopherols T-50 mixture is used to stabilize oils and fats in cosmetic products. These ingredients are prone to oxidation, which can lead to rancidity, unpleasant odors, and changes in the appearance of the final product. Tocopherols, as powerful antioxidants, neutralize free radicals that initiate and propagate the oxidation process. Tocopherols react with free radicals by donating electrons and stabilizing them, preventing further oxidative damage to fat molecules. When tocopherols neutralize free radicals, they themselves become stable radicals that are not reactive, thus stopping the chain reaction of lipid oxidation. This process significantly extends the shelf life of cosmetic products containing oils and fats, maintaining their freshness and quality.

Usage: Tocopherols T-50 is a component of the fat phase. It is typically used in concentrations from 0.1% to 1%. It is insoluble in water and unstable in the presence of heat and oxygen. In the production of cosmetic products, it should be added at temperatures below 40°C, as higher temperatures can cause it to lose color. Store in a dry and dark place at temperatures between 15°C and 30°C (not in the refrigerator!).

CIR (Cosmetic Ingredient Review) Expert Panel: The CIR Panel is an expert panel of a nonprofit organization established in 1976 to assess the safety of cosmetic ingredients used in personal care products. The CIR Panel consists of experts in toxicology, dermatology, pharmacology, and other relevant scientific disciplines. The panel independently reviews and evaluates scientific data on ingredients to determine if they are safe for use in cosmetics. The results and recommendations of the CIR Panel are published in the CIR Annual Scientific Review, which is available to the public and the industry and serves as a guide for cosmetic manufacturers regarding the safety of ingredients used in their products.

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.

TECHNICAL DATA SHEET

The CIR Expert Panel has reviewed available scientific data and concluded that tocopherol and related ingredients are safe for use in cosmetics and personal care products. This means there are no significant health risks when these ingredients are used according to recommended guidelines. The data analyzed in the review included results from various studies and experiments addressing the toxicological, dermatological, and pharmacological aspects of these ingredients. Based on this data, the panel concluded that the following ingredients are safe: Tocopherol (Vitamin E), Tocophersolan, Tocopheryl Acetate, Tocopheryl Linoleate (ester of Vitamin E and linoleic acid), Tocopheryl Linoleate/Oleate (mixture of esters of Vitamin E with linoleic and oleic acids), Tocopheryl Nicotinate (ester of Vitamin E and nicotinic acid), Tocopheryl Succinate (ester of Vitamin E and succinic acid), Dioleoyl Tocopheryl Methylsilanol (silicon derivative of tocopherol), and Potassium Ascorbyl Tocopheryl Phosphate (a stable derivative of Vitamins C and E used for its synergistic antioxidant properties).

Studies have shown that tocopherol and its derivatives used in cosmetic products do not cause skin irritation or sensitization (allergic reactions). CIR Expert Panel members who are practitioners in dermatology and toxicology have not observed adverse dermal effects in patients using products containing these ingredients. This further confirms the safety of these ingredients based on practical experience. Reproductive toxicity and carcinogenicity studies showed that these ingredients did not have adverse effects on reproduction nor did they cause cancer. These findings are crucial as they ensure that long-term use of these ingredients will not lead to serious health issues. These compounds have demonstrated the ability to reduce cell mutations, which is associated with their antioxidant properties. Antioxidants help neutralize free radicals, which can damage cells and lead to mutations that can cause diseases such as cancer. In conclusion, the CIR Expert Panel has, based on a thorough analysis of scientific data and clinical trials, confirmed that tocopherol and its derivatives are safe for use in cosmetics and personal care products without significant health risks.

Application: Widely used in making creams, lotions, soaps, as well as in formulations with oils and butters.

Animal Testing: Not tested on animals

GMO: Non-GMO

Vegan: Contains no animal-derived components

Disclaimer: The details provided here are specific to the identified material and may not remain accurate if that material is combined with other substances or used in different processes. The information presented is, to the best of the company's knowledge, considered precise and trustworthy as of the date mentioned. However, the company does not make any explicit or implied assurance, guarantee, or claim regarding the information's precision, trustworthiness, or comprehensiveness, and will not be held accountable for any losses, damages, or costs, whether direct or indirect, that arise from its use. Users are encouraged to independently verify the appropriateness and thoroughness of this information for their specific purposes.