

Human Nutrition Department



Stermax

BIOESTERS OF OMEGA 3/6/9





Pharmapex® Group

Headquartered in the U.S., Pharmapex is a multinational group of companies offering a broad range of health-related products to domestic and international markets. Some of the major sectors within the healthcare industry that Pharmapex supports include, but not limited to:



- Human Nutrition
- Human Pharmaceuticals
- Animal Health

- Biotechnology
- Consumer Healthcare
- Medical Device & Consumables





StermaxTM - Natural source of Omega 3,6,9

Stermax is the only product line in the global market that has the highest concentrated content of Omega-3,6,9 fatty acids, isolated from unique mixture of four vegetable oils, balanced in excellent ratio of Omega-3 and Omega-6 fatty acids.









Linseed oil

- rich source of acid ALA
- source of phytosterol

Borage oil

- •the richest source of GLA
- high content of tocopherols
- •parent contents δ tocopherol
- •source of∆5- avenasterol

Evening primrose oil

- •the richest source of LA
- source of GLA

•source of ALA

- •source of GLA
- •SDA acid content
- •high content of tocopherols
- •source of α- tocopherol
- source of phytosterols

Blackcurrant oil

ABOUT ETHYL PRODUCTS UNIQUE COMPOSITION DIRECTIONS OF APPLICITATION

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ALA – Natural precursor of fatty acids

- > Stermax product line contains the unique essential unsaturated plant fatty acids Omega-3 (α-linolenic ALA). The human body can't produce ALA by itself so it is necessary to supply it in daily food. Moreover ALA is a precursor of the rest of omega-3 fatty acids, i.e., DHA and EPA (metabolic pathway).
- ➤ Plant Omega-3 has strong pharmacological properties, independent of DHA and EPA activity, and therefore occupies most important position in a number of Omega-3 acids.
- ➤ The FDA (Food and Drug Administration) has recognized ALA as the only essential polyunsaturated omega-3 fatty acid.
- > Stermax product line is a rich source of extremely valuable Gamma-linolenic acid (GLA Omega-6).





Why Ethyl Esters?

The ethyl ester form provides excellent bioavailability and high bioretention of fatty acids Omega 3,6,9 in the human body. Ensures fast transportation to all cells of human body and beneficial health effect. Additionally, transesterification process is carried out under nitrogen atmosphere, which increases the stability of the product and protects against fatty oxidative changes.

Moreover ethyl esters production process guarantee the removal of all pollutants occurring in vegetable oils, which results in 100% plant preparations in the form of ultraclean monoesters









Technology

- ➤ Our research and production facility for this line is a fully automated production line for production of Omega 3/6/9 fatty acid ethyl esters with a capacity of 170 L/h (up to 1 200 mt p.a.) of the final product.
- ➤ The line complies with all standards applicable to the production of food, cosmetics and veterinary preparations. Our approvals include but not limited to:
 - ✓ Approval of the District Sanitary Inspector for the production of foodstuffs for the production of other foodstuffs and dietary supplements,
 - ✓ Approval of the District Veterinary Officer for the production of feeds (w/o the use of products of animal origin).
- ➤ The production process is carried out in accordance with GMP/HACCP standards for food production facilities.
- > The production line is adapted to carry out the process of many different types of raw materials.





Technology

Ethyl esters of polyunsaturated fatty acids are obtained as a result of the transesterification reaction that takes place in an alkaline environment with the use of ethyl alcohol, in the presence of a catalyst i.e. potassium hydroxide (KOH).

The reaction is based on the chemical exchange of a glycerol radical, from a triglyceride molecule, to an ethanol radical. The process makes the esters pure and unbiased with any residuals

The process protects ethyl esters from adverse changes in oxidative.

Complete transesterification process at the stage of obtaining raw materials is carried under nitrogen protection (nitrogen sheath).

Possibility of contact of the raw material and product with moisture or atmospheric oxygen is excluded in that way. In addition before the end of packaging process, the product is saturated with the nitrogen.





Technology











Directions of applications:

- Human dietary supplements
- Pharmaceutical products
- Functional food
- Cosmetic components
- Sports nutrition products
- Veterinary preparations





Stermax Product Line



100% vegetable

bioesters of fatty acids omega 3.6.9



Stermax product line contains the highest concentration of vegetable fatty acids omega 3,6,9 isolated from the unique composition of 4 different oils in the form of ethyl esters. Such form assures it's excellent bioavailability and high bioretention in a human body.



- Stermax classic
- Stermax kids
- Stermax cardio
- Stermax skin

ABOUT COMPANY ETHYL ESTERS

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Stermax_™ classic



The highest concentrated dose of vegetable fatty acids Omega-3,6,9

Ingredients: 100% of ethyl esters of higher fatty acids, with a high content of essential unsaturated fatty acids Omega 3, 6, 9, vitamin E.

- Increases immunity
- Improves well-being
- Increases vitality

Stermax Classic is a unique product in the global market, which has the highest concentration of Omega-3,6,9 fatty acids, isolated from unique mixture of four vegetable oils (linseed oil, evening primrose oil, borage oil, and black currant oil). The composition of the product has been balanced to deliver Omega-3 and Omega-6 fatty acids in the "excellent ratio of $\Omega 3/\Omega 6$ ".





Stermax_™ kids



Product for kids and teenagers for a healthy growth

Ingredients: 100% of ethyl esters of higher fatty acids, with a high content of essential unsaturated fatty acids Omega 3, 6, 9, vitamin E, vitamin A, vitamin D3, raspberry aroma.

- Supports growth and development
- Strengthens bones and teeth
- Supports brain activity

Omega-3,6,9 fatty acids have a tremendous impact on children's health. They are essential for proper growth and development of the body, both during fetal life, for infants and young children.





Stermax_™ cardio



Dietary supplement for a healthy heart

Ingredients: 100% of ethyl esters of higher fatty acids, with a high content of essential unsaturated fatty acids Omega 3, 6, 9, vitamin E, vitamin K2, Vitamin D3, Lecithin.

- Supports cardiovascular system
- · Maintains normal cholesterol level
- · Reduces fatigue

A dietary supplement that supports the work of cardiovascular system by maintaining normal blood pressure, reducing triglycerides level and elevating HDL cholesterol.





Stermax_™ skin

Nutricosmetic for healthy and beauty skin without visible effects of ageing.

Ingredients: 100% of ethyl esters of higher fatty acids, with a high content of essential unsaturated fatty acids Omega 3, 6, 9, vitamin E, vitamin A, vitamin D3, Coenzyme Q10.

The composition of the product contains increased amount of evening primrose oil and borage oil. rich in Gamma-Linolenic acid (GLA).

- · Nourishes, improves flexibility and regenerates skin
- · Delays effects of aging
- · Soothes irritations and inflammation

A nutricosmetic that soothes inflammatory skin disorders, such as atopic dermatitis, psoriasis and acne. It nourishes and support regeneration process of the skin, improves its elasticity and prevents from visible ageing effects.







Patents

Our group has patent claims in the field of production technology for the production of ethyl esters and plant-based compositions:

"Process for producing a mixture of ethylesters of vegetable fatty acids with high cis isomer content".



Application at the European Patent Office (EP) and United States Patent and Trademark Office (USPTO)

"Composition of ethyl esters of plant fatty acids"





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