



*Océopin proposes a totally original
vegetable oil with exceptional virtues:*

Maritime Pine Seed Oil

Pinus Pinaster Seed Oil

The maritime pine - pinus pinaster -
is a fine, slender tree which grows in the sandy soils
along the southern Atlantic beaches of France.

Its fruit - pine cones -
are harvested each year throughout the extensive
forests then opened naturally in order to release
the precious seeds they contain.

Maritime pine seed virgin oil
is extracted by an initial cold pressing process,
which makes it a luxurious 100% natural oil.

Oil extract,
which is exceptionally rich in polyphenols,
is produced using natural solvents and an appropriate,
fully harnessed extraction process.

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l'huile de graines de pin maritime

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• General criteria

- Part pressed: Seeds
- Country of origin: France
- Appearance at 20°C: Liquid
- Color: Golden (virgin) to light yellow (extract)
- Odor: Botanical and delicate, without deodorization

• Quality criteria

- Oleic acidity: < 1%
- Peroxide index: < 10 meq O₂ / kg
- Water and volatile element content: < 0.1%
- Level of impurities: < 0.1%
- Iron content: < 5 ppt
- Copper content: < 0.4 ppt

• Composition

Fatty acids

- | | |
|-----------------------------------|------------------------------------|
| - Palmitic C 16:0 4 à 5% | - Linolenic C 18:3 (n-3) 2% |
| - Stearic C 18:0 2,5% | - Gondoic C 20:1 (n-9) 1,5% |
| - Oleic C 18:1 (n-9) 18 à 20 % | - Sciadonic C 20:3 (Δ5 n-6) 8 à 9% |
| - Linoleic C 18:2 (n-6) 50 à 55% | - Behenic C 22:0 < 1% |
| - Pinoleic C 18:3 (Δ5 n-6) 7 à 9% | |

Total polyunsaturated fatty acids: > 70% / Total monounsaturated fatty acids: > 20%
And only < 10% of saturated fatty acids

Unsaponifiable fraction: 1,19%

Total sterol content: 600 à 900 mg / 100g

of which β sitostérols: ± 65% / of which Campesterol: ± 15% / of which Δ5 avenasterol: ± 12%

Total tocopherol content: ± 700 mg / kg or ppm

of which Gamma-Tocopherols: ± 90% / of which Alpha-Tocopherols: ± 10%

Maritime pine seed oil naturally gives good oxidative stability.

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• Composition

Vitamin E activity: ± 10 mg alpha - TE / 100g

Maritime pine seed oil is a "source of vitamin E".

Total polyphenols: ± 45 mg / kg (virgin) et ± 500 mg / kg (extract)

These two contents expressed in caffeic acid equivalence are twice as high as the figure for most other vegetable oils. Maritime pine seed oil is naturally very rich in phenolic compounds, as characterized by our laboratory research.

• Contaminants

- Pesticides: none
- Mycotoxin: none
- Benzo(a)pyrene: free

Sourced from non-GMO trees, maritime pine seed oil boasts perfectly traceable origins and proven innocuousness, is guaranteed free of chemical pollutants and respects the European Directive for allergens.

- Aflatoxin B1: free
- Pathogenic germs: none
- Allergens: none

> "Hypoallergenic" or "formulated to reduce the risks of allergy" further to sensitization with volunteers. (IDEA test)

• Packaging and storage

Maritime pine seed oil is nitrogen-packed and must be stored away from the light and heat until used for cosmetic formulation (topical).

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• Applications

Maritime pine seed virgin oil has an excellent feel, a delicate botanical smell and is quickly absorbed without leaving any greasy film. Its composition is 55% linoleic acid from the omega 6 family, an essential fatty acid which plays a major role in the fluidity of membranes, the renewal of cells and the skin's function barrier (control of water loss to give a highly significant hydrating effect). In all, this totally original vegetable oil contains more than 70% of polyunsaturated fatty acids. **In this respect, it stands out as one of the most remarkable oils from the plant world.**

Its originality lies with the simultaneous presence of omega 6, 9 (oleic acid), 3 (linolenic acid) and fatty acids from the Delta 5 family (sciadonic and pinoleic acids) in which it is the richest of all vegetable oils. The latter, thanks to their acknowledged structuring role and vital action in the synthesis of molecules with high biological activity, give the skin suppleness and incomparable vitality. **Sciadonic acid, in particular, promotes the oxygenation of cells to counter the dulling of skin and replump the epidermis.**

The oil's unsaponifiable fraction is composed of a significant quantity of phytosterols (600 to 900mg/100g of which β sitosterols at a level of $\pm 65\%$) and tocopherols (700 ppt, of which Gamma-Tocopherols at $\pm 90\%$ and Alpha-Tocopherols at $\pm 10\%$) with anti-inflammatory and anti-oxidizing virtues. **As a natural source of vitamin E, maritime pine seed oil enhances the skin's tolerability and protects from exterior insult.**

Maritime pine seed polyphenols, found in large quantities in the virgin oil and in even larger amounts in the extract, protect tissue by combating free radicals and oxidative stress, reactivate the micro-circulation and so are effectively instrumental in **the delaying of skin aging**. They also have a proven photo-protective effect (shielding from UVBs), which, associated with the "seaboard" evocation of maritime pines, offers great appeal for sun care product ranges. **This fabulous wealth in terms of optimal anti-oxidizing protection elevates maritime pine seed oil to the status of one of the market's most effective anti-oxidizing products.**

Added to any cosmetic formula at a concentration of between 0.5 and 2%, alone or combined with other active ingredients, maritime pine seed oil is an exceptional plant-sourced companion-in-arms for all demanding skins, recommended in particular for restructuring and general anti-aging skincare products.

Maritime pine seed oil is the product of a high-traceability industry that respects biodiversity and offers guarantees for quality and safeness to all formulators seeking to acquire the finest raw materials for their products.

Guaranteed specifications are available by request.
For further details about our company and our product, please visit www.oceopin.com

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