Lipolami®
Milk Thistle

Optimised Sensoriality for Natural Formulation

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INTERNATIONAL

Optimised Sensoriality for Natural Formulation

Lipolami® is a natural cosmetic formulation ingredient in the form of fluid, dry soft-touch oil, obtained from milk thistle, an original plant in cosmetics. It is the ideal natural ingredient to formulate silicone-free products with a silky, light and non-sticky touch. It provides sensation of extreme softness during application. Lipolami® also offers emollient properties providing the skin with perfect comfort and flexibility.

Characteristics

Lipolami® is obtained through transesterification of the fatty acids triglycerides of the milk thistle oil. This process results in obtaining monoesters which are responsible for the main cosmetic properties of the oil.

The esters of natural fatty acids provide a dry skin feel and are more fluid than vegetable oils, making them more suitable in cosmetic formulation.

INCI Name

Silybum Marianum Ethyl Ester

***Focus** on milk thistle...*

Milk thistle (*Silybum marianum* Gaertn., Asteraceae) is a robust plant which can reach 1.50m in height. It bears large green shiny leaves with thorny lobes and white veins along the nerves.

The solitary terminal flowerheads are made up of purple tubulous flowers surrounded by thorny bracts. The fruits are black, shiny, wrinkled akenes, with an egret on top, and they contain approximately 30% lipids.

Milk thistle grows wild in uncultivated areas in the South of France, Central and Southern Europe, Western Asia and North Africa.

Milk Thistle Oil and Lipolami®
Comparison of their physical characteristics

Viscosity (measured at 25°C with a dynamic viscosimeter)

- Milk thistle oil: 60 cPs
- Lipolami® Milk Thistle: <5 cPs
- Distilled water: 1 cPs

Lipolami® is almost as fluid as water, thus much more fluid than the oil.

Surface tension by the method of the Wilhelmy plate

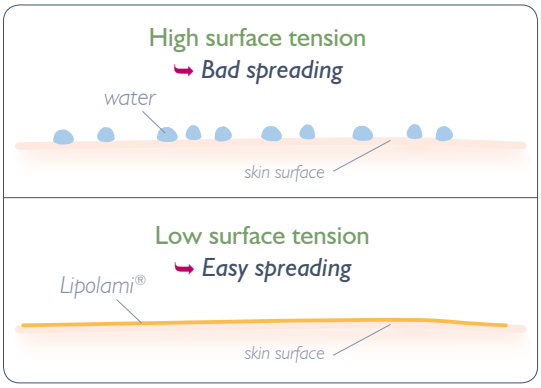
- Milk thistle oil: 32,6 10^{-3}N/m
- Lipolami® Milk Thistle: 30,5 10^{-3}N/m
- Distilled water: 72,75 10^{-3}N/m

Transesterification of milk thistle oil hardly modifies its surface tension.

Lipolami®'s spreading capacity

The good spreading capacity of a product depends on its fluidity but also on its surface tension. The surface tension is the strength able to stretch the surface of a liquid when applied to it. The lower the surface tension of a liquid, the better the liquid can be spread.

For instance, water is very fluid but tends to form droplets instead of a uniform film whereas a vegetable oil, though more viscous, spreads much easily thanks to its low surface tension.



This is why Lipolami®, which is as fluid as water and keeps the same surface tension as the oil, is very easily spreadable.

This characteristic, along with its dry feel, makes Lipolami® a perfect ingredient to formulate natural textures with outstanding sensorial properties.

Lipolami®'s Formulation Assets

Lipolami® Milk Thistle is the ideal natural ingredient to formulate silicone-free products with a silky, light and non-sticky touch. It becomes the indispensable ally of your natural textures thanks to its numerous assets in formulation:

Exceptional capacities of solubilisation and dispersion

1. It efficiently solubilises oil-soluble **UV filters** (such as benzophenone-3, le butyl methoxydibenzoyl-methane et l'octylmethoxycinnamate)
2. It can be used **in fragranced cosmetics** as a natural solvent to solubilise fragrance bases, in place of petrochemical solvents and with no negative impact on the fragrance
3. It enables **very homogenous dispersions** of pigments, mica, titanium oxides, glitter, etc.

Sensorial qualities

1. It offers exceptional qualities of **finish, touch and softness**
2. It **decreases the whitening soap effect** (usual in natural formulation)
3. It i**mproves the picking up** of rich textures
4. It is ideal in the formulation of **make-up removers** as it efficiently solubilises oily substances
5. It makes **foaming products softener** for skin and hair
6. It takes care of the skin thanks to its **emollient and softening properties**

Galenic properties

1. It can be **easily emulsified**: emulsions are finer and more homogenous, consequently more stable *(see study opposite)*
2. It does **not present a known incompatibility** with any other cosmetic ingredient
3. It can be incorporated in **foaming products** at more than 1% without phase separation, while keeping them transparent (contrary to vegetable oil)

Microscopic observation comparing the fineness and the homogeneity of two emulsions

Cosmetic Use

All types of products, fluid and light textures as well as rich and creamy one:

- Emulsions for face and body
- Foaming products (shampoos, shower gels…)
- Massage oils
- Dry oils
- Make-up removers
- Hair care
- Sun care

Formulation

Due to its composition (esters of unsaturated fatty acids), Lipolami® is sensitive to oxidation. It is preserved by a natural antioxidant but must be used with caution:

- It must be incorporated in emulsions at a moderate temperature (about 40°C)
- The formula itself must be preserved with an antioxidant

When solubilising UV filters with Lipolami®, avoid excessive and/or too long heating.

➤ Recommended usage level

- 2% to 5% in skin care products (creams, lotions, etc.)
- 0.5% to 1.5% in hygiene products

Tests

➤ Innocuity

The good tolerance of Lipolami® has been assessed by two tests:

- Test for primary skin irritation (48 hours patch test on volonteers)
- Test for primary eye irritation (NRR)

➤ Eco-toxicity

- Aerobic ready biodegradability test (manometric respiratory assay - OECD 301 F)
- Readily biodegradable (>80%)

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