Ingredients Information
Zinc oxide is a mineral with astringent, antiseptic and covering effects. Because it absorbs both UVA and UVB rays of ultraviolet light, zinc oxide can be used in ointments, creams, and lotions to protect against sunburn and other damage to the skin caused by ultraviolet light. It is the broadest spectrum UVA and UVB absorber that is approved for use as a sunscreen by the FDA.

**Description:**

Zinc oxide is a chemical compound with the formula ZnO.

**Properties of Zinc oxide:**

Mineral UV protection in sunscreens, wound healing effect in creams for babies.

**Cosmetic applications:**

Sun screens; baby care.
LIPO AMINOACID

Lipo aminoacid (INCI: undecylenoyl phenylalanine) is an active ingredient that has been scientifically proven to have a very fast lightening effect on skin pigmentation. Chemically speaking it is a synthesized compound from phenylalanine and undecylenic acid. Lipo aminoacid has a novel mode of action, it blocks the receptors for the melanocyte-stimulating hormone alpha-MSH (α-MSH), which plays an important role in skin pigmentation process. Lipo aminoacid acts as an α-MSH antagonist.

Description:
α-MSH (alpha-melanocyte-stimulating hormone) stimulates the production and release of melanin (melanogenesis) by melanocytes and plays an important role in skin pigmentation.

Lipo aminoacid works by „antagonizing“ alpha-MSH. It blocks the receptors for alpha-MSH on the surface of the melanocytes and inhibits the synthesis of melanin.

Additionally, lipo aminoacid reduces the activity of tyrosinase, the essential enzyme in the formation of melanin, by stabilizing it in its inactive form.

Constituents of lipo aminoacid:
Undecylenoyl phenylalanine.

Properties of lipo aminoacid:
Lipo aminoacid acts as an α-MSH antagonist and has skin lightening properties.

Key benefits – scientifically substantiated claims:
• Visible lightening effect after 2 months proved in vivo on Asian volunteers.
• Super-fast lightening effect (7 days) by combining AHAs.
• Excellent tolerance when used at recommended level.

Cosmetic applications:
Skin lightening products.
Mulberry or *Morus* is a genus of 10–16 species of deciduous trees native to warm, temperate, and subtropical regions of Asia, Africa, and the Americas, with the majority of the species native to Asia. The most known species in Europe are morus alba and morus nigra. The extract of the bark and root contains substances that hinder the formation of melanin.

**Description:**
The mulberry tree has sawed leaves and grows up to 15 m. Its leaves are the basic food for silk worms. The fruits of the black mulberry look like blackberries and are edible.

**Constituents of mulberry extract:**
The roots are rich in phenylflavons. The leaves are rich in asparaginic acid and vitamin C.

**Properties of mulberry extract:**
The phenylflavons of mulberry would contribute in an effect of whitening, anti-inflammatory and moisturizing of the skin. The effect of whitening would be mainly the result of an inhibition of the activity of tyrosinase, an enzyme taking especially place in the synthesis of melamine.

**Cosmetic applications:**
Mulberry extracts are used for their treatment of skin lightening.
Encyclopedia of Ingredients

DIACETYL BOLDINE SOLUTION

Diacetyl boldine solution enhances skin’s lightening and is used in products with lightening or whitening properties. The complex contains diacetyl boldine, a derivate of boldine, which is naturally derived from the bark of the Chilean boldo tree. Diacetyl boldine blocks the transformation of inactive tyrosinase into active tyrosinase (only the active form of tyrosinase is able to catalyze the production of melanin from tyrosine). In that way diacetyl boldine inhibits melanin production in the skin.

Description:
The brown coloration of the skin results from the pigment melanin which is produced in special epidermal cells, so-called melanocytes. The enzyme tyrosinase, usually present in its inactive form, is produced in these melanocytes. Its activation triggers off melanogenesis, a complex series of enzymatic chemical reactions which finally lead to melanin formation.

Diacetyl boldine blocks the transformation of inactive tyrosinase into active tyrosinase. It stabilizes tyrosinase in its inactive form and interrupts melanin synthesis.

Constituents of diacetyl boldine solution:
Diacetyl boldine in C₈ C₁₀ triglycerides.

Key benefits – scientifically substantiated claims:
Diacetyl boldine solution enhances skin lightening. In vitro tests on melanocyte B16 Line report a 53% drop in tyrosinase activity and a 51% decrease in the quantity of melanin. In another study, a diacetyl boldine solution treated 3D skin model was found to have a visible and significant reduction in epidermal pigmentation. In vivo colorimetric testing reported similar findings in that diacetyl boldine solution treatment produced a lower melanin index and a higher ITA (clarity). Over half of the panellists in a self-evaluation indicated their skin appeared to have less pigmented areas. Overall the consensus was that the skin was lighter and more radiant and their complexion more even.

Cosmetic applications:
Skin brightening or whitening products.
Vitamin C (L-ascorbic acid) is found in most higher animals and in plants in different amounts. It is synthesized in its pure form but as it is very unstable it has to be protected from water, light, air and heat. It supports the action of vitamin E by regenerating and reactivating it as a radical scavenger. Has itself scavenging properties and is involved in the formation of collagen.

Description:
Ascorbic acid is a sugar acid with antioxidant properties. Its appearance is white to light-yellow crystals or powder. It is water-soluble and must be formulated at low pH to stay active. The L-enantiomer of ascorbic acid is commonly known as vitamin C.

Properties of Vitamin C:
In clinical studies vitamin C has been found to act as an antioxidant and anti-inflammatory agent. In addition, vitamin C has been found to stimulate collagen synthesis and to reduce dark pigmentation of the skin (e.g. age spots). Thus, vitamin C is also considered an anti-aging ingredient.

Cosmetic applications:
Skin care, sun care, regeneration, repair, skin whitening.
## SORR

**SORR** is a plant based complex of active ingredients that evens and rejuvenates skin complexion. The complex is an association of two plant extracts (Rabdosia rubescens and Sigesbeckia orientalis). It acts on the 3 visible skin chromophores, genuine ageing markers, by reducing melanin and haemoglobin and improving collagen.

### Description:

Skin chromophores are responsible for the colour our eyes perceive. The two main chromophores in the skin are melanin and haemoglobin. The distribution of these two chromophores in young skin is very homogenous. Thus, a young healthy skin has an even complexion. Oxidative stress generated by free radicals enhances skin aging processes and among others stimulates melanogonesis (melanin production and distribution) and affects blood capillaries and microcirculation. These processes result in pigmentation and skin redness. SORR reduces the heterogeneity of the chromophores melanin and haemoglobin and induces even skin tone. Improvement in collagen homogeneity leads to a smoother surface. The consequence is that light reflection is improved and so is skin radiance.

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<th>Siegesbeckia orientalis</th>
<th>Rabdosia rubescens</th>
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### Constituents of SORR:

Extract of Rabdosia rubescens, rich in Oridonin and Sigesbeckia orientalis extract, rich in Darutosides.

### Key benefits – scientifically substantiated claims:

SORR evens and rejuvenates skin complexion. It fights against chromophores aging and skin damage (collagen degradation, inflammation, brown spots) by protecting the skin from oxidative stress. Chromophore mapping revealed a significant decrease in redness and brown spots and improvement in collagen homogeneity.

### Cosmetic applications:

Anti-ageing products for face and body.