

EMULSION MAINS PIGM 400

TREATMENT STAGE

Product description:

Emulsion Mains PIGM 400: A rich cream to repair damaged, pigmented hands thanks to a combination of relipidating, hydrating and anti-pigmentary ingredients. Its multipolar formula helps correct existing pigmentary imperfections and prevents the appearance of new spots.

Skin Instants: Ideal for pigmented, dehydrated and delipidated Skin Instants.

Available sizes and package descriptions:

Retail Product: 75 ml Tube

Professional Product: 200 ml Tube

1/ Biologique Recherche observations

Diagnosis:

Certain kinds of spots, called "age spots" or "lentigos", can appear on hands. These spots, also known as maculae, are darkish brown and between a few millimetres and a few centimetres in diameter. Their surface is smooth and their boundary is well delineated. Often located on the back of the hand, lentigos are caused by an excess of melanin in the epidermis due to overproduction of the pigment by melanocytes.

There are two kinds of age spots: **epidermal** (superficial) and **dermal**. It is important to recognize and distinguish between them. To determine the type and depth of these spots, the aesthetician or doctor must use a Wood lamp. If the spot gets darker under the lamp, it is **epidermal** (70% of cases). However, if its appearance does not change, it is **dermal** and therefore more difficult to treat.



An accurate diagnosis is essential, since some age spots can in fact be precancerous lesions or even malignant tumours, whose early detection and treatment is crucial. Diagnosis by a qualified doctor is thus a necessary first step for treatment.

Naevus (mole)		Melanoma	
Asymmetrical		Asymmetrical	
Irregular		Irregular	
Polychromatic		Polychromatic	
Large (>6mm diameter)		Large (>6mm diameter)	

In addition, hands are the body part which is most exposed to weather conditions. The epidermis makes up a protective layer whose ability to protect depends on its water and lipid content. The epidermis of the hands is especially thin. Dried by the sun, the cold or the many mechanical actions they are subjected to on a daily basis, they become fragile and damaged and lose their suppleness, which may lead to the appearance of cracks. The skin of the hands gets creased with time, leading to the appearance of the first signs of aging.

1.1 Skin hyperpigmentation

A) Analysis

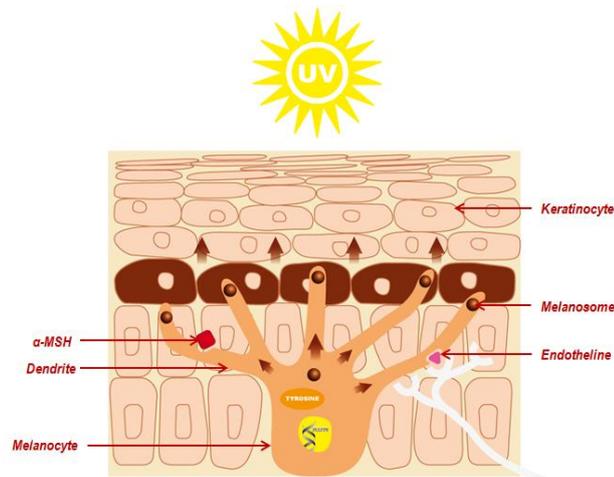
Pigmentary spots may be due to melanin hypersecretion, uneven melanin distribution or protein and lipid oxidation.

➤ Melanogenesis (melanin production)

Melanocytes are dendritic cells with projecting fibres. They are found in the basal layer of the epidermis and are surrounded by keratinocytes.

The presence of UV radiation triggers the melanin production mechanism, in four steps.

- 1- First of all, UV rays stimulate the synthesis of the α -MSH hormone and other messengers such as endothelin and phytoendorphin, which activates the neurons responsible for the skin's healthy appearance and radiance.
- 2- The α -MSH hormone and endothelin activate tyrosinase, a key enzyme in melanogenesis which transforms tyrosine, found in the melanocytes, into melanin.
The melanin that is produced is then stored in vesicles called melanosomes.
- 3- These melanosomes migrate through the dendrites (the melanocytes' projecting fibres) to be combined with the keratinocytes. Finally, melanosomes regulate melanin inside the keratinocytes.
- 4- Through the phenomenon of cell renewal, the keratinocytes move up to the surface with the melanin.



However, this pigmentation process breaks down over time: the concentration of melanocytes increases, which leads to the abnormal local accumulation of melanin and, eventually, the appearance of age spots.

➤ Lipofuscin (protein and lipid oxidation)

Lipofuscin is produced by the aging of lysosomes, which are found in all cells. When lysosomes get old, they can no longer break themselves down because they lose their enzymatic properties. They become bodies which remain in the cell for a long time and form a lipofuscin deposit. This deposit, produced through the oxidation of proteins and lipids, becomes a yellowish-brown pigment.

There are different elements which are naturally present in the body and which help fight against lipofuscin:

- Proteasome, an enzymatic complex located in cells which degrades and naturally recycles damaged, oxidised proteins, helping to eliminate lipofuscin.

- Antioxidants, naturally found in the body, which limit the oxidation of these proteins and lipids.

With age, proteasome activity is reduced and its functioning is affected by UV radiation. In addition, oxidative stress increases because the antioxidant system is more and more limited. As a result, lipofuscin gradually accumulates.

This phenomenon leads to the appearance of age spots.

B) Causes

➤ **Sun exposure**

The natural phenomenon of hyperpigmentation is frequently caused by **sun exposure** (63% of age spots are caused by the sun).

➤ **The aging process**

Intrinsic skin aging is accompanied by dullness, skin drying and pigmentary issues. The most common pigmentary issue is senile lentigo, which appears around fifty years of age on exposed parts of skin, especially on the backs of the hands. It affects over 90% of people aged over 50.

➤ **Genetic predisposition**

Some people are genetically predisposed to age spots, such as certain ethnic groups with yellow, olive or dark skin.

➤ **Hormonal imbalances**

Many hormones are involved in hyperpigmentation. For women, the levels of sex hormones (especially oestrogen and progesterone) vary with the cell cycle, pregnancy, the use of contraceptives and menopause (HRT). These factors are all involved in hyperpigmentation. Other hormones, such as those produced by the pituitary gland (such as ACTH), can also play a role: in fact, some types of hyperpigmentation are associated with endocrine diseases.

➤ **Reactions to medications**

Some medications or antibiotics (such as tetracycline) can provoke the appearance of dark spots in some people. The same goes for chemotherapy and radiotherapy treatments. Spots caused by these treatments normally disappear within six months.

➤ **Cell hypertoxicity**

For example, the topical application of a synthetic fragrance followed by sun exposure makes cells hypertoxic and may cause the appearance of spots. The same effect is produced following the use of certain essential oils.

1.2 The epidermis, the skin's protective barrier

A) Analysis

As the body's envelope, the skin plays a protective role and acts like a barrier that manages exchanges with the outside. The skin's surface is made up of a thin protective film composed of a mix of fatty substances and water - hydrolipidic film. The fatty substances mainly come from sebum, produced by sebaceous glands, and the water is taken from sweat produced by sweat glands. Since there are fewer sweat glands and sebaceous glands on the hands, the skin there is particularly susceptible to dryness.

➤ **Hydrolipidic film** (*occlusive film*)

This film acts as an external barrier that helps limit transepidermal water loss (TEWL) and maintain skin's flexibility. It also helps fight against pathogenic microorganisms. Thanks to the presence of slightly acidic compounds such as lactic acid, pyrrolidone carboxylic acid and amino acids (Natural Moisturizing Factors), hydrolipidic film has a protective function.

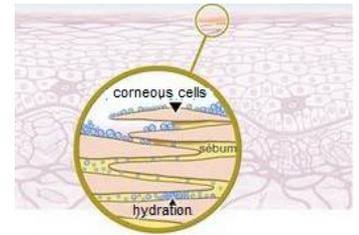


Diagram of hydrolipidic film

➤ **Epidermal lipids** (*intercellular cement*)

Lipids hold the cells of the corneous layer (corneocytes) together: they act as an intercorneocytary cement. These lipids ensure the integrity and the barrier function of the corneous layer by limiting water evaporation. They restrict the rate of transepidermal water loss due to their hydrophobic properties.

➤ **NMFs** (*hygroscopic substances*)

The term NMF (Natural Moisturizing Factor) refers to a mix of hygroscopic substances (amino acids, etc.) which retain water and act like sponges. They help skin preserve the proper level of hydration for normal function. In addition, NMFs absorb humidity from the air and contribute to the functioning of many enzymes involved in the progressive breakdown of intercellular junctions, such as desquamation.

B) Causes

Low lipid levels and dehydration in the epidermis are caused by:

➤ **Intrinsic factors (independent from external factors and inherent to the epidermis)**

Insufficient sebaceous secretion: Sebum has an occlusive effect, which reduces water evaporation from the surface of the skin, when ambient humidity is low. Thus, when sebaceous secretion is insufficient, more water will evaporate and the epidermis will be dehydrated.

A deficit in Natural Moisturizing Factor (NMF): Water is retained in the cells of the epidermis thanks to NMFs. As a result of an NMF deficit, the skin lacks water in the corneous layer.

Heredity: Some people have less lipids in the outer layer of their skin for genetic reasons.

Aging: With age, the concentration of water in the corneous layer is reduced from 13% to around 7% and sebaceous glands become less active. The effects of aging on skin are more pronounced for women than for men. In addition, women's skin tends to get gradually drier after menopause.

Skin illnesses such as psoriasis, eczema or ichthyosis, where skin is rough to the touch and desquamates in an abnormal way.

Hormonal or thyroid imbalances and certain medications: Hormonal changes alter the functioning of the sebaceous glands, which sometimes results in skin dryness, as can certain diuretic or laxative medications.

➤ **Extrinsic factors (high-risk behaviours that are not related to the nature of the epidermis)**

Cold: When it is cold, the functioning of the sebaceous glands is slowed. Since sebum secretion is reduced, the hydrolipidic film that forms a protective coating on the surface of the skin is thinned. Without this natural protection, the skin of the hands gets more fragile and more sensitive.

The dermis also plays an essential role in the body's water reserves. However, in the cold, blood vessels contract on the surface of the dermis and their diameter is reduced. Therefore blood flow is weakened, causing issues with intradermal water regulation. This causes the amount of water transport by the blood to be reduced. The skin

can no longer replenish the water that has naturally evaporated. Since it is less well-irrigated, it becomes dehydrated and damaged.

Air: The air, upon contact with the skin of the hands, causes a loss of water contained in the skin. The drier the air is, the more water is evaporated. Skin becomes rough.

Other factors

- Soap dissolves a part of the hydrolipidic film on the surface of the skin.
- Interior heating in winter reduces ambient humidity.
- Prolonged sun exposure dries the upper layers of the skin.
- Insufficient water consumption or the loss of large amounts of water can be caused by intense, sustained physical activity.

As a result, skin's primary need is hydration, which is even more important for the hands, where skin is naturally dry. Proper hydration of the surface of the epidermis causes an immediate smoothing effect and provides protection against aggressions that may accelerate skin aging. In addition, the hands are the body part most frequently exposed to UV radiation, causing age spots to gradually appear. It is therefore essential to prevent and reduce the appearance of existing age spots while hydrating the skin of the hands in order to preserve their beauty.

2/ The Biologique Recherche solution

The Emulsion Mains PIGM 400 is a cream with a high concentration of active ingredients. It reduces the appearance of pigmented spots, helps prevent the appearance of new spots on the hands and creates a protective barrier on skin against external aggressions. Hands are thereby protected and skin is evened out. This treatment is especially recommended for pigmented, dehydrated and delipidated Skin Instants.

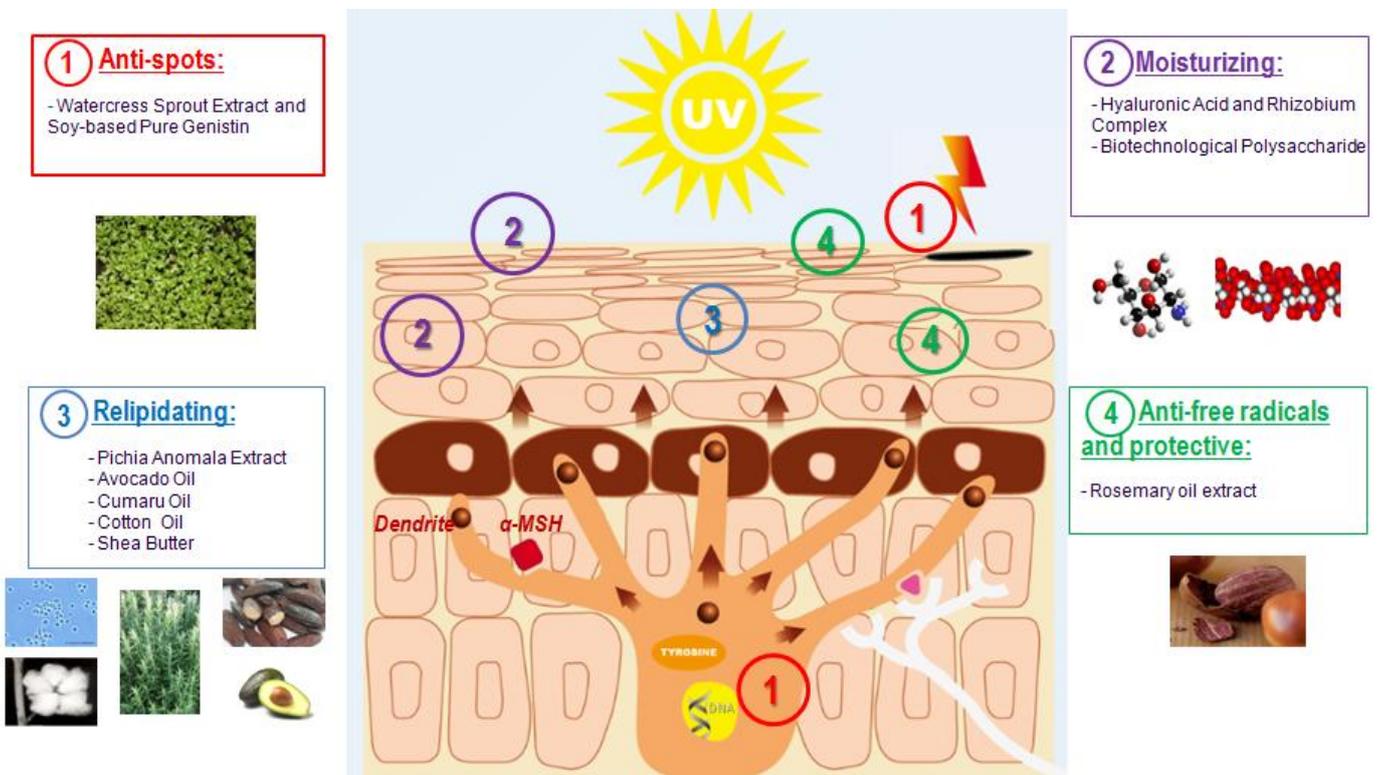
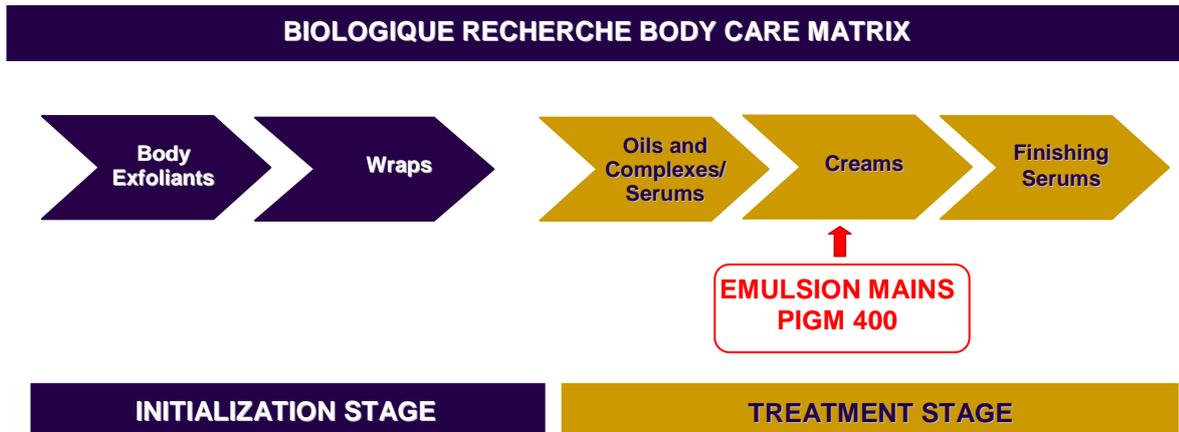


Diagram of Biologique Recherche Body Care Matrix:

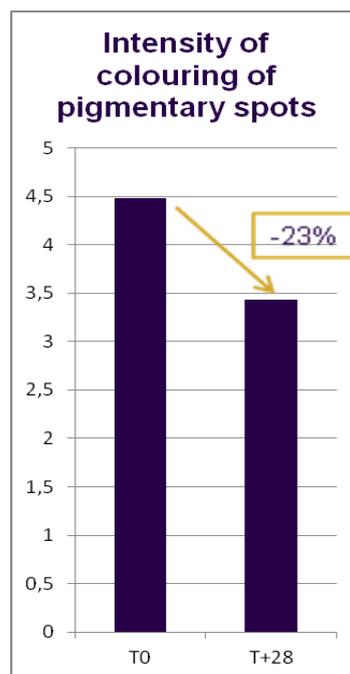


3/ Benefits

Actions:

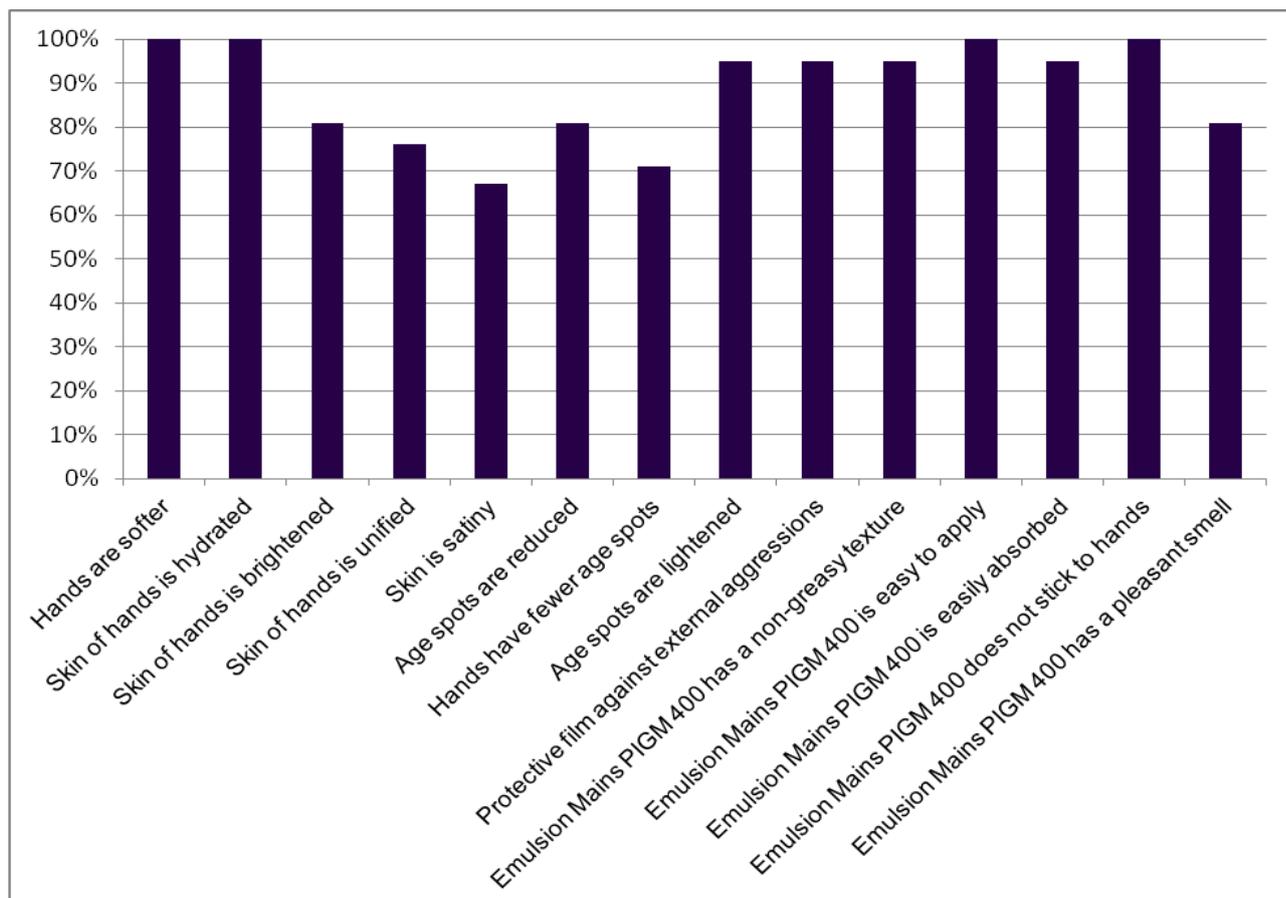
- Lightens your hands
- Reduces the appearance of existing age spots
- Limits the appearance of new spots
- Immediately unifies, reduces irregularity issues and illuminates the skin tone
- Hydrates the outer layers of the epidermis
- Gives a feeling of comfort as soon as it is applied which lasts throughout the day
- Regenerates, restructures and reconditions the epidermis
- Protects skin against weather aggressions (wind, sun, cold)

Clinical test evaluated by a dermatologist: The results obtained demonstrate a significant reduction in intensity of pigmentary spots on hands after four weeks of application.



Scale from 0 to 5 (0 representing the absence of age spots)

Use test performed on a panel of 21 people aged between 47 and 67 years with age spots on their hands. Regular application of the product for four weeks.



4/ Vector of the formulation and the Active Ingredients

Active ingredients: Watercress Sprout Extract and Soy-based Pure Genistin, Hyaluronic Acid and Rhizobium Complex, Biotechnological Polysaccharide, Pichia Anomala extract, Avocado Oil, Cumaru Oil, Cotton Oil, Shea Butter, Rosemary Oil Extract.

A unique, complex formula with four platforms of action:

1. Lightening active ingredients

Watercress Sprout Extract and Soy-based Pure Genistin

This extract regulates the formation of melanin and lipofuscin and reduces their accumulation in the skin by activating proteasome. It reduces the pigmentation of brown spots in a targeted way (*in vivo*), prevents photo-induced aging and evens out skin pigmentation (*in vivo*).



2. Moisturizing active ingredients

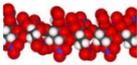
Hyaluronic Acid and Rhizobium Complex

This active ingredient consists of hyaluronic acid, a molecule naturally present in the dermis, and rhizobium, a symbiotic bacterium of sunflowers. Associating these two naturally-based polymers creates a supple and flexible protective film on the surface of the skin, which regulates perspiration. By its role as a water reservoir for restoring the skin's water needs, this complex actively encourages hydration and essential skin protection functions.



Biotechnological Polysaccharide

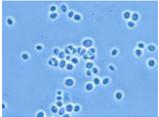
When acted upon by the skin's enzymes, the biotechnological polysaccharide produces fucose, a special sugar that increases suppleness and provides immediate hydration. A filmo-protective conditioner, this ingredient gives skin a silky soft feel.



3. Lipid-replenishing active ingredients

Pichia Anomala extract

This pure fraction of mannan from Pichia Anomala (a yeast) participates in driving the skin's natural lipid-replenishment system thanks to its boosting effect in the key steps of synthesis, transport, secretion and maturation of epidermal lipids. This proof-tested active ingredient also considerably reduces Insensible Water Loss.



Avocado (oil)

Avocado Oil is extracted from the fruit of the avocado tree, the pulp of which has remarkably high oil content. Avocado Oil is an active lipid-replenishing ingredient, due to its high concentration in unsaturated fatty acids. It also boasts skin softening and protective properties.



Cumaru (oil)

Native to the Amazon, Cumaru Oil is extracted from the fruit of the Cumaruzeiro tree, 40%-45% of the nut being a highly aromatic oil. Cumaru Oil is rich in fatty acids (oleic, linoleic...) with lipid-replenishing and hydrating properties.



Cotton (oil)

Cultivated in India for 5,000 years, the cotton plant grows in arid tropical and subtropical climates. This oil, extracted from the seeds of cotton capsules, possesses emollient, moisturizing and regenerating properties. It is used in both face care and body care products.



Shea butter

Shea Butter is extracted from the fruit of the Shea tree, a large tree that grows in woody African savannahs. It is lightly oily, rich in unsaponifiables and vitamins E and F. Shea Butter prevents skin dryness, stimulates cell renewal, and helps restore softness and suppleness to the skin, while protecting it from external aggressions.



4. Protective active ingredients

Rosemary oil extract

Seen since ancient times as a plant with beneficial and curative properties, this extract is taken from rosemary leaves. A powerful antioxidant, it protects against degradation caused by the oxidation of its fatty substances and protects skin from the harmful effects of the sun and pollution.



5/ Directions for use:

At home: Apply **Emulsion Mains PIGM 400** to hands and massage gently until completely absorbed. Use morning and night, as necessary.

As part of a treatment: **Emulsion Mains PIGM 400** is ideal for moisturizing hands and reducing pigmentary spots at the end of the treatment and can also be used for massage as part of a hand beauty treatment.

6/ Main selling points

- Reduces pigmentary spots thanks to Watercress Sprout Extract and Soy-based Pure Genistin.
- Your hands will be lightened and regain a youthful appearance.
- A multi-benefit treatment to counter the imbalances in dry, pigmented hands.

- The hydrolipidic barrier is restored, providing better protection against winter harshness and summer dryness.
- Rapidly penetrates without leaving a greasy film.
- Your skin will be perfectly hydrated and regain suppleness, softness and radiance.
- Your hands will be adequately protected for daily needs.

INCI

Water (Aqua), Glycerine, Acacia Decurrens/Jojoba/Sunflower Seed Wax (Cera) Polyglyceryl-3 Esters, Lauryl Laurate, Dicaprylyl Carbonate, Gossypium Herbaceum (Cotton) Seed Oil, Pentylene Glycol, Polyamide-5, Mica, Sodium Acrylates Copolymer, Cetyl Alcohol, Glyceryl Stearate, Butyrospermum Parkii (Shea) Butter, Persea Gratissima (Avocado) Oil, Phenoxyethanol, Titanium Dioxide, Dipteryx Odorata Seed Oil, Bertholletia Excelsa Seed Oil, PEG-75 Stearate, Polysorbate 80, Alcohol, Lecithin, Ceteth-20, Steareth-20, Polyacrylamide, Caprylyl Glycol, Ethylhexylglycerin, C13-14 Isoparaffin, Pichia Anomala Extract, Helianthus Annuus (Sunflower) Seed Oil, Phytic Acid, Rosmarinus Officinalis (Rosemary) Leaf Extract, Laureth 7, Rhizobian Gum, Sodium Hyaluronate, Biosaccharide Gum-1, Chlorphenesin, Soy Isoflavones, Lepidium Sativum Sprout Extract, Tocopherol