

# Collagen CLR and Maricol S

At the root of modern-day skincare regimens



## Collagen CLR and Maricol S

in vivo  ex vivo  in vitro

**Collagen CLR** has strong affinity and substantivity to human skin, making it a potent natural film-forming ingredient. With its extremely high water-binding capacity, Collagen CLR nurtures the skin instantly, effectively and noticeably. Since it improves the biomechanical properties of skin, skin feels smoother and more supple.

Collagen CLR comprises native, soluble collagen with a “skin-identical” triple helical structure (not hydrolyzed). Its amino acid composition is very similar to that of human collagen Type I.

**Maricol S** is due to its film-forming and skin-protective properties, especially suitable for the care of dry and mature skin as well as skin stressed by negative environmental influences. Maricol S is a native soluble collagen of marine origin, obtained from fish skin.

### Collagen CLR / Maricol S

**Dosage:** 3.0–10.0%  
**pH range:** 3.7–6.5 / 4.5–6.5  
**INCI Name:** Soluble Collagen

**Collagen CLR / Maricol S**  
are preserved with sodium benzoate.

### Skin benefits

- Extracted by an extremely careful process, to obtain the intact natural collagen molecules
- Film-forming and skin-protective
- Highly substantive to skin
- Odorless
- Superior to hydrolyzed collagen

### Applications

- Moisturizing

### Marketing opportunities \*

- Boosts the skin’s natural processes of regeneration
- Rejuvenates the texture and elasticity of facial skin
- Contours are tightened, skin complexion appears plumper, smoother and more even
- Restores moisture, skin’s cushion and its bounce
- Helps to reduce the appearance of expression lines

\* This list is for illustrative purposes only.

Make sure to comply with relevant legislation.

# Collagen CLR and Maricol S

## Native collagen

Collagen, in its natural and native form, is the first ever active ingredient used in the cosmetic industry. Despite, or probably because, it was first employed more than 50 years ago, the use of collagen is growing continuously. Both its safety and benefits for cosmetic formulations are recognized by virtually all cosmetic chemists worldwide.

About half of the total body collagen can be found in the skin. Collagen makes up 70% of materials other than water that are present in the skin, where approximately 85% of all collagen found is collagen Type I. Collagen belongs to the family of fibrous insoluble proteins with a triple helical structure, has a diameter between 50nm and 300nm and is of indeterminate length. Collagen molecules are so large that they can easily be seen with electron microscopy. A single 1-mm collagen fiber is said to be able to withstand a static load of up to 20kg. No wonder collagen is essential for skin firmness.

The composition of collagen is unique; every third amino acid in the triple helix is glycine, and collagen contains large amounts of both proline and hydroxyproline as well. Bovine (Collagen CLR) and marine collagen (Maricol S, extracted from tuna fish skin) are similar to human collagen. Both their composition and structure are strongly related to the collagen in our skin, making them very useful for topical formulations. Their safety – a prerequisite in modern-day formulations – has a proven track record of more than half a century. Animal native collagen, for instance, has even been used in wound dressing to accelerate wound healing, e.g. in the treatment of burn wounds, illustrating both its safety and benefits.

Native collagen must be clearly distinguished from hydrolyzed collagen. It is very carefully extracted without any chemical manipulation so that it can be obtained in its 100% natural form. Collagen hydrolyzates represent a class of products where the collagen is at least partly hydrolyzed, i.e. destroyed, either chemically or through enzymes, which more often than not leads to an undefined mixture of peptides and free amino acids. For this reason collagen hydrolyzates have a totally different effect on skin than native collagen.

## Benefits

Collagen in its native form, as present in Collagen CLR (bovine origin) and Maricol S (marine origin), has been reported to improve the appearance and feel of the skin, making it smoother. It has also been indicated to reduce the appearance of fine wrinkles. There are even reports of native collagen being used to reduce the irritation of harsh surfactants, illustrating its suitability for products such as baby shampoo.

The above benefits mainly stem from the fact that native collagen is a large molecule with tremendous water-binding capacity. When applied on the skin, the collagen molecules, having high substantivity to the skin surface and large molecular weight, form a vast network, essentially producing a continuous film on the skin. This allows for immediate and strong water retention in the top layers, thus rehydrating the skin – a key attribute in any modern skincare formulation, albeit for daily moisturizers or high-end anti-aging formulations. Apart from instant hydrating effects, the use of native collagen has also been shown to reduce water loss through the skin, i.e. transepidermal water loss (TEWL). A major reason why native collagen is still one of the most widely used active ingredients in the cosmetic industry is the simple fact that above-described moisturizing qualities are basically still unmatched, despite the vast amount of modern-day moisturizers supplied to the cosmetic industry.

## CLR

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