Wellness in our daily Life

- Skin Care-Anti-ageing
- Healthy Joints
- Energy-Sport nutrition
- Low carb meals & snacks
- Hair care products

NatiCol® 1000
NatiCol® 4000
The Weishardt company introduces, **NatiCol® 1000** and **NatiCol® 4000**, a complete range of marine hydrolyzed collagen

**NatiCol®** is selectively derived from fish skin & scales which have been consumed by mankind for a long time.
Part I. NatiCol® Flow chart

Weishardt International is certified ISO 9001/2000

100% Fish & Scales skin

Degreasing
Extraction
Acid treatment
Purification

Enzymatic hydrolysis

Filtration
Concentration
Sterilisation
Spray-drying
Integrating the fish activity from beginning to end, Weishardt controls each step. All raw material is veterinary controlled.

Weishardt controls each step and can guarantee total traceability from the farm to the delivered batch.
Applying gelatine process affords the best security.

2 sterilisations assure the best bacteriology.

Ionic demineralisation and filtrations the maximum purity and highest collagen ratio.

Weishardt, while purchasing various species worldwide guarantees the best long term security, for you and your customers.

Choosing NatiCol® means also avoiding some risks and questions regarding BSE for bovine collagen, avian flu for chicken collagen or any epizootic disease which could appear locally.
Part I. NatiCol® composition?

NatiCol® contains:

- 93-95% protein mainly collagen peptides type I and III
- Less than 6% water
- Less than 2% mineral salts

NatiCol® is:

- Carbohydrate FREE
- Fat FREE
- PURINE FREE
- CHOLESTEROL FREE
- OGM FREE
- PRESERVATIVE FREE
Weishardt has developed two molecular weights covering the main market needs and adapted to various applications.

**NatiCol**® 4000 is close to usual Marine collagen found on the market (Av<4000Da). Its very high organoleptic properties make Naticol 4000 one of the most appreciated and make the difference!

**NatiCol**® 1000 is obtained through a special process in order to obtain low molecular weight short chains of peptides (Av<2000Da). It is particularly adapted to topic applications. Due to its faster assimilation by organism, it can be also adapted to some oral applications.
Part I. NatiCol® 1000 specificity

Molecular weight Distribution (MWD)
- 0.3-1 Kda minimum 40%
- 1-2 Kda 30%

NatiCol® 1000 has an extraordinary level of low molecular weight which makes it so unique compared to conventional collagen.
Part I. NatiCol® Amino-acid (AA) composition

NatiCol® contains:
- 27.6% of Glycine
- 23% of Proline & Hydroxyproline

which are the main components of skin

NatiCol® contains:
- 8 essentials amino-acids
- 14.5% of the total AA
Part I. NatiCol® Amino-acid (AA) composition

**CHEMICAL INDEX** (way to look for the ideal protein)

- Naticol index is 146 bearing in mind that above 100 means complete protein. Only the absence of Tryptophane is a limiting factor as for all collagens.
- The index of amino-acids (Pro, Hypro, Gly) necessary for skin is double that of soy or milk protein.

AA composition varies slightly according to age, food and origin.
I. NatiCol® solubility

- Excellent solubility in cold water (5%)
- Highly dispersible (up to 30% of MG)
- Very good clarity

100% Natural Fish Collagen
2 types: Powder (Pd) & Micro-granulated (MG)
White powder, Odourless

Brand X
Part I. NatiCol® Key benefits

■ 100% Natural Marine product
■ 2 types: Powder & Micro-granulated
■ 93 to 95% of pure Collagen
■ High level of oligo-peptides
■ High level of essential amino-acids
■ Neutral taste and odour
■ Excellent solubility in cold water
■ Halaal certified
NatiCol is a natural source of collagen type I, the major protein found in connective tissues and skin (more than 75%) which plays an essential role in maintaining skin tone, suppleness & elasticity. Unfortunately after the age of 25 collagen synthesis reduces at a rate of 1.5% a year. By the age of 45 collagen levels can have fallen by as much as 30% \(^1,^2,^3\).

The external effects of this process are the appearance of wrinkles, fine lines & dry skin.
Part II. NatiCol® Skin benefits

- **NatiCol** provides a pure & concentrated level of marine collagen (95%). Used in rejuvenating formulae it help to replenish the body's own collagen and provides essential nutrients to re-build collagen cells due to its small molecule (tripeptides) and its high bioavailability.

- Regular use of products integrating **NatiCol marine collagen** may help slow the signs of ageing by increasing Collagen synthesis, skin elasticity & firmness and reduce fine lines and wrinkles.
## Part II. NatiCol® 
### Skin care markets & applications

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Part II. NatiCol® Cosmetic use

COSMETIC USE

- NatiCol® can be used in topical cosmetic anti-age and skin care preparations (cream, lotions, emulsions).
- NatiCol® can be used in oral cosmetic «Cosmetofood» anti-age and skin care preparations (tablets, soft gels, beauty drink..)

SAFETY/TOLERANCE

NatiCol® is 100% safe and has a good tolerance.

DOSAGE/FREQUENCY

1. Topical Dosage: 0,2 to 2%
2. Oral Dosage: 5g per day
3. Solubility: NatiCol® is soluble in water, by stirring at room temperature.
4. Frequency of use: Daily or twice daily for 2-4 months
Part II. NatiCol®
Cosmetofood suggested formulations

Example 1: Cosmetic supplements (tablets, capsules) for anti-wrinkle and anti-ageing effect

- NatiCol® (marine Collagen) : 1000mg
- Vitamin C : 100mg
- Vitamin A (retinol) : 50 mg
- OPC (grape seed extract) : 50 mg

Example 2: Cosmetic supplements (sticks) for instant drinks

- NatiCol® (marine Collagen) : 800mg
- Acerola extract (vit C) : 100mg
- CoQ10 : 10 mg
- Marine Chondroitin sulfate : 100 mg
- Flavour
Part II. NatiCol®

Cosmetofood suggested formulations

Example 3: Cosmetic Supplements for Skin Whitening & Anti-ageing effect

- NatiCol® (marine Collagen): 800mg
- Fytoperfect® (skin whitening complex): 800mg
- Vitamin C: 100 mg
- Vitamin E: 100 mg

Total beauty from within
Part II. NatiCol®

Cosmetic suggested formulations

Example 4: Cosmetic gel for anti-wrinkle effect

• NatiCol® (95% pure marine Collagen) : 2%
• Other ingredients: Carpobol, Glycerin, Perfume, sodium sulfate, ethanolamin, preservatives

Example 5: Cosmetic cream for anti-wrinkle & moisturizing effect

• NatiCol® (95% pure marine Collagen) : 2%
• Other ingredients: Vitamin E, Soy & Advocate oil, Glycerin, perfume, sodium sulfate, preservatives,....
Part II. Bibliography


Both ends of the bone (epiphysis) - covered by the articular cartilage - are kept in position by the joint capsule.

The synovial membrane binds the 2 articular surfaces and secretes a synovial fluid which ensures cartilage lubrication.
Part III. Normal Articular Cartilage

Chondrocytes (Joint cells)

Articular cartilage is a connective tissue made of cellular components (Chondrocytes) and an extracellular matrix, formed by collagen fibres and a gel called fundamental substance.

This « fundamental substance » contains free proteoglycans and free glycoproteines.

Proteoglycans are large molecules made up of a long chain of hyaluronic acid bound with protein and GlycoAminoGlycans (mainly Chonroitin sulfate).
Chondrocytes are cells that help cartilage to grow and stay healthy. They synthesize the collagen and proteoglycans that form the extracellular matrix, the basis of the cartilage tissue.
GlycosAminoGlycanes (GAGs) - previously called mucopolysaccharides - are large molecules formed by the repetition of more than 100 polysaccharide units.

Chondroitin sulfate (CS) is the main GAG found in the articular cartilage.

CS is a glucoside sulfate polymer (50-100 Kda) formed by the repetition of disaccharide units of galactosamine and glycuronic acid.

CS has a strong electronegative structure which confers a high hydrophobic capacity.
Part III. What is Collagen?

- Collagen is an essential and major component of connective tissues (joints, tendons, cartilage, ligaments, blood vessels), and makes up 25% of the total protein mass.
- It is a complex trimer structural protein with a high level of glycine and proline and moreover contains Hydroxyproline and Hydroxylysine found in very few other proteins.
- There are 3 main types of collagen:
  - Type I and III (found mainly in skin, tendon and bone)
  - Type II (found exclusively in cartilage)
Part III. NatiCol  Healthy Joints markets & applications

Joints markets

1. Senior Joint Health
2. Sportsmen Joint health
3. Menopausal women

Applications

1. Osteoarthritis
2. Healthy Joint functions
3. Osteoporosis
Part III. What is Osteoarthritis?

Osteoarthritis (OA) is the most common form of age-related disease in people aged 65 and older. It is a degenerative joint disease characterised by the breakdown of joint articular cartilage, triggering pain, stiffness and swelling.

Rheumatoid arthritis (RA) is an autoimmune disease different from OA. In fact, the immune system attacks the body’s own tissue as though it were a foreign invader. People with RA produce rheumatoid factor, an immunity-related substance that targets the synovial membrane (protective layer that encases joints). The consequences are severe pain and inflammation, joint pain and loss of joint movement & functions.
Clinical studies have shown that hydrolysed collagen targets and has a positive effect on joint tissue \(^1, 2, 3, 4, 7\).

Daily supplements of 6-10 g of hydrolysed collagen are generally admitted to reduce pain and improve mobility when use with complementary ingredients.

It has been suggested that hydrolysed collagen stimulates chondrocyte production, which is involved in the biosynthesis of type II collagen, essential to new cartilage formation. \(^1, 2, 4, 6\).
Part III. Bibliography


