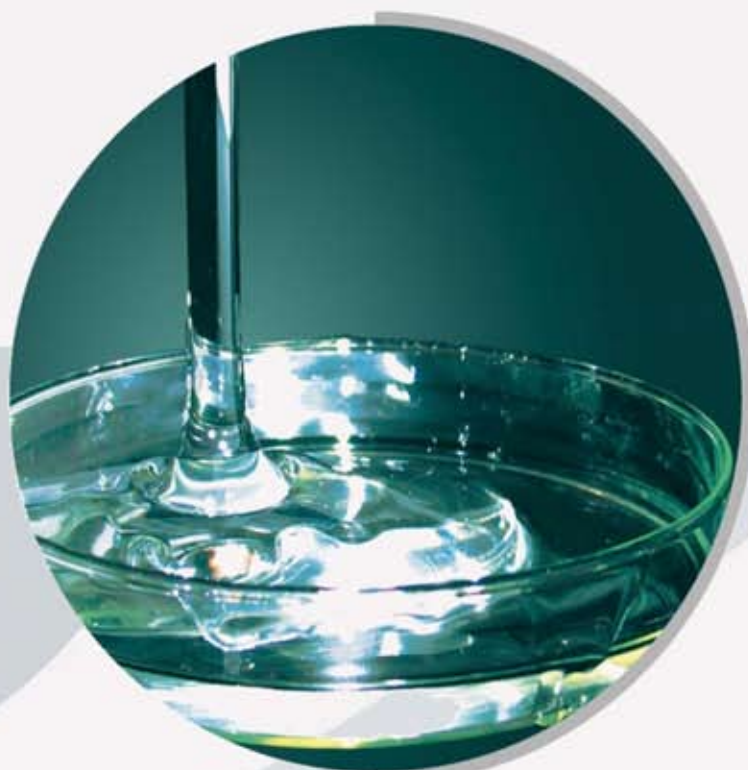


October 2008

PHYLCARE[®] SODIO YALURONATO LINE



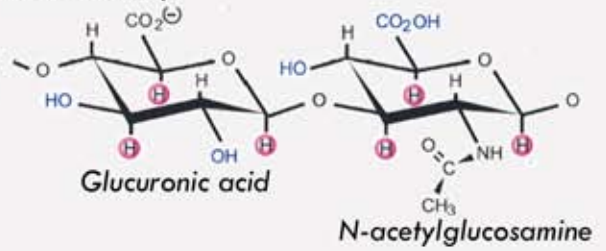
GET WATER WHERE YOU WANT IT



WHAT IS PHYLCARE® SODIO YALURONATO ?

PHYLCARE® SODIO YALURONATO, is a high quality **SODIUM SALT** of **HYALURONIC ACID** (usual abbreviation: **HA** - also referred to as **HYALURONAN**, or **HYALURONATE**).

As a relatively simple element of the glycosaminoglycan family, hyaluronic acid is composed of a regular repetitive sequence of the following non-sulfated disaccharide unit:



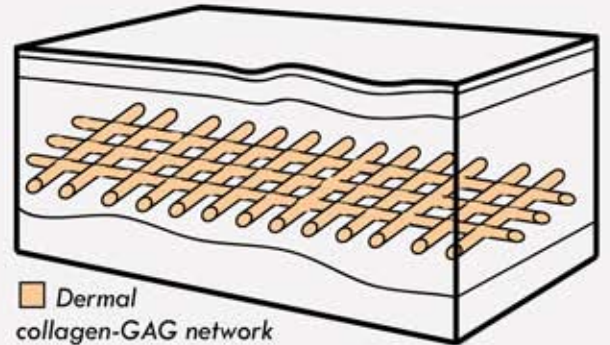
Electronic microscope photograph of HA

WHERE IS IT NATURALLY FOUND?

Hyaluronic acid is a natural compound of the biologic soft tissues, widely distributed in the human body. It is mainly found (more than 50%) in the skin and connective tissues (synovial membranes, joints).

The molecular weight of natural body hyaluronate ranges from 4.000 to 8.000.000 Daltons. In the skin, it is found in epidermis and mostly dermis, where it is synthesized by fibroblast cells. It

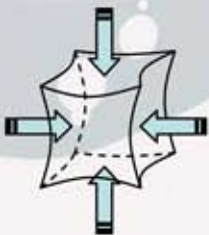
constitutes the **predominant glycosaminoglycan (GAG)**, strong basis of the **collagen-GAG network** supporting skin's structure.



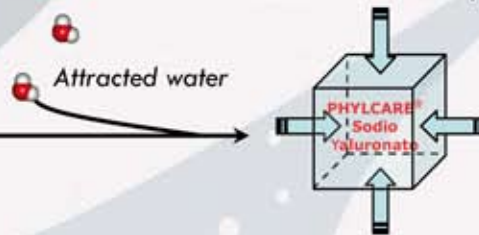
MECHANICAL PROPERTIES

Due to the molecule **rigidity** and its capacity of **attracting water**, Hyaluronate occupies a large volume, forming a gel, resisting mechanical pressure:

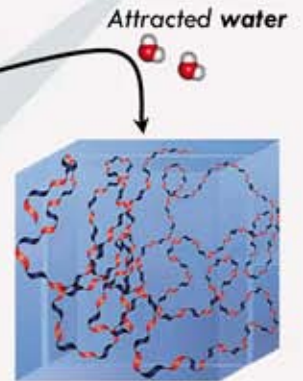
Without HA:



With HA:



Linear molecule of HA in random ball



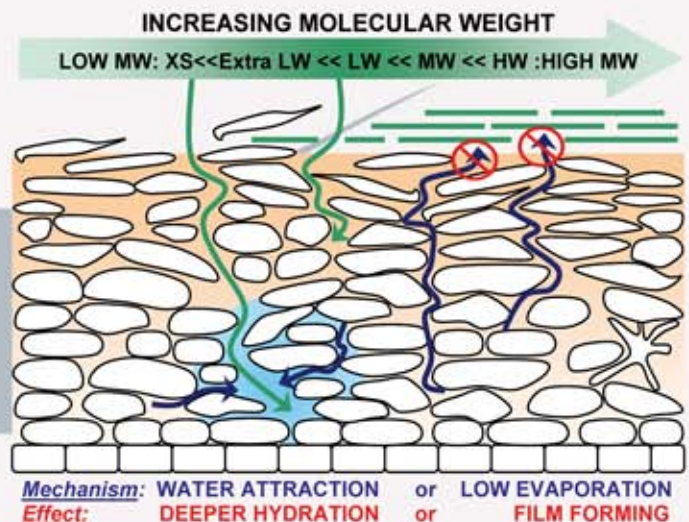
Plumped structure of molecular HA in solution

HYDRATION PROPERTIES

Literally acting like a sponge in our skin, PHYLCARE® SODIO YALURONATO can reach a level of water mobilization of up to **20 times its own weight**.

EFFECT OF HA ON THE SKIN

Always searching for new **technical solutions** to reach the **best results**, BIOPHIL has developed **different categories of HA with diverse molecular weight**, allowing you to cover all benefits of PHYLCARE® SODIO YALURONATO, from HW film-forming properties to XS deep hydration.



PRODUCT CHARACTERISTICS

PHYLCARE® SODIO YALURONATO is produced from *Streptococcus* strain using **biofermentation technology**, applying only **non-GMO** raw materials (peptone, yeast extract, glucose). It is not extracted from animals, and avoids any possibility of contamination from animal proteins.

TECHNICAL EXPERTISE & PRODUCTION CAPACITY

With a long experience in **only Sodium Hyaluronate**, the production team has capacity to answer any technical demand with no delay. The **manufacture** and **quality control expertise** has been audited and approved (GMP standard workshops, modern fermentation and purification workshops, top quality analysis apparatus, ISO certification).

The characteristics of PHYLCARE® SODIO YALURONATO set the **highest standards of the market**.

FORMULATION & MARKETING EXPERTISE

With more than **30 years of experience** in the cosmetic market, and an increasing presence in nutraceutical and pharmaceutical markets, BIOPHIL applied its formulative and application know-how in the development of PHYLCARE® SODIO YALURONATO.

Targeting the **innovative applications** of a product too often considered only as a basic ingredient, BIOPHIL provides technical, commercial and marketing assistance, as well as formulation support to better understand the possibilities of this **active ingredient** for any of your projects.

APPLICATIONS & OFFERED GRADES

COSMETIC GRADE		
PHYLCARE® SODIO YALURONATO	Molecular Weight Range (in kDa)	APPLICATIONS
HW	1 800 to 2 200	Film forming, tensing
MW	1 000 to 1 800	Long-lasting hydration
LW	400 to 1 000	Fastrack hydration
EXTRA LW	100 to 400	Deep hydration
XS	Less than 100	Reconstituting hydration
SOLUTIONS	Specialty	Preserved for direct use

RECOMMENDED DOSAGE:

Moisturizing cream:
HW (0,1-0,2%) MW (0,05-0,1%)
Anti-ageing cream:
LW (0,1%) Extra LW, XS (0,05-0,1%)
Lifting effect cream:
HW (0,1-0,2%) MW (0,1%)
Eye-contour gel:
LW (0,1-0,2%) Extra LW, XS (0,1%)
After-sun product:
HW (0,1%) MW (0,05-0,1%)
After-shave balm:
HW (0,05-0,1%) MW (0,05-0,1%)
For formula support, please contact us.

RECOMMENDED DOSAGE:

20 to 200 mg /day

FOOD SUPPLEMENTS:

Oral cavity care*, Joints care*,
Lubrication*, Endogenous
hyaluronic acid regeneration*,
Anti-ageing*

FOOD GRADE		
PHYLCARE® SODIO YALURONATO	Molecular Weight Range (in kDa)	APPLICATIONS
FOOD HW	1 800 to 2 200	Film forming, patch effect
FOOD MW	1 000 to 1 800	Efficient cost in use
FOOD XLW	50 to 200	High digestibility

PHARMACEUTICAL GRADES <i>conform to European Pharmacopoeia 5.0</i>		
PHYLCARE® SODIO YALURONATO	Molecular Weight Range (in kDa)	MICROBIOLOGY
P-ED standard	700 to 900	Level of endotoxins < 0,5 IU
P-FIL standard	1 500 to 2 500	Level of endotoxins < 0,05 IU
Non standard	On demand	Specific projects

RECOMMENDED DOSAGE:

Pure to diluted

PRODUCTS:

Ingredients are often included in formulations such as: lubrication for articulations*, eye drops* and eye wash* products, soft tissue fillers*, viscoelastic solutions for post-surgery*, knee osteoarthritis solutions*

* **WARNING** : For any application indicated, please refer to the current legislative situation in your country of interest

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