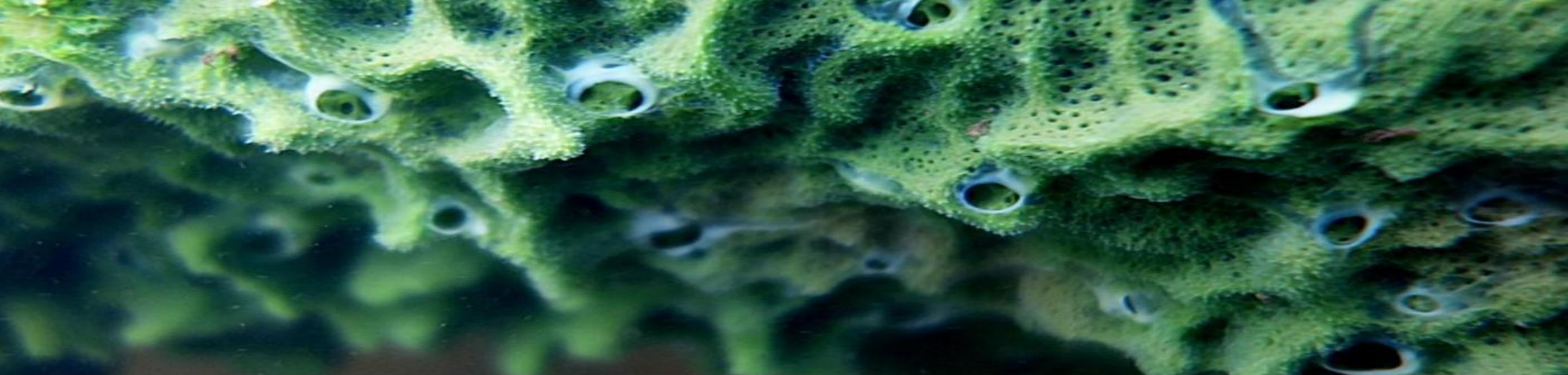




HYDROLYZED SPONGE

【스피큘 원료】

MADE IN KOREA



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The INCI name of sponge spicule is hydrolyzed sponge, also known as sponge needle and biomicroneedling. Sponge spicule is extracted from freshwater sponges, which are siliceous skeletal animals living in freshwater. They usually grow in clean lakes and slow streams. Their bones are small needle-like objects with a certain hardness and a length of 100-350 microns. The spicules are hollow and porous and do not dissolve in any organic solution. Therefore, they can be used as very good natural cosmetic raw materials, as an introduction medium, exfoliation and skin rejuvenation raw materials.

Spicule treatment is a special facial treatment method that can replace radio frequency micro-needling and chemical peeling. No special certificate required. It can reduce the risks brought by surgery or injection, especially for the treatment of acne, pigmentation and other skin problems, and it is very effective in improving skin elasticity and wrinkle removal. It can also be mixed with other cosmetics or drugs to achieve the effect of accelerating keratin exfoliation. It has an auxiliary effect on the treatment of scar removal and stretch marks. There are also studies that it can activate our hair follicles, open the skin absorption channel, and have a good auxiliary effect on hair growth.

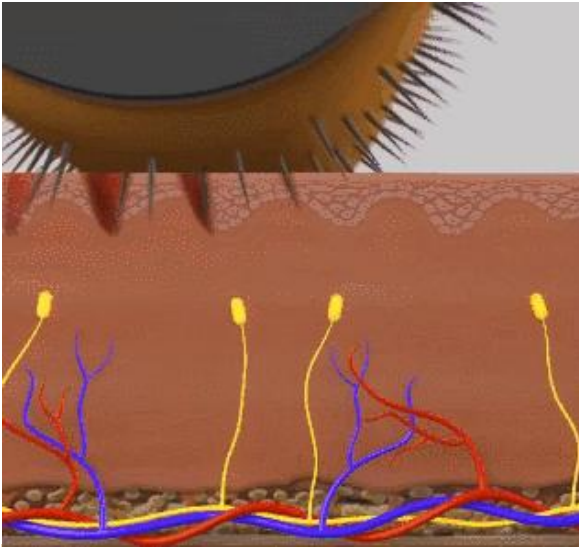
How dose sponge microneedles work on the skin?

1. Promote subcutaneous microcirculation, speed up skin metabolism, and quickly metabolize skin cell toxins and inflammatory mediators
2. Penetrate the stratum corneum, reach the base layer directly, and stimulate basal cells, then the body will start the self-healing mechanism, accelerate skin growth, and form a thrust on aging cell tissues. Waste cells and skin toxins will naturally move upward with the skin to achieve shedding and elimination. It is targeted at dullness, darkening, spots, acne, blackheads, acne pits, acne marks, large pores, folliculitis, scars, and aging skin.

Spicule VS metallic microneedling

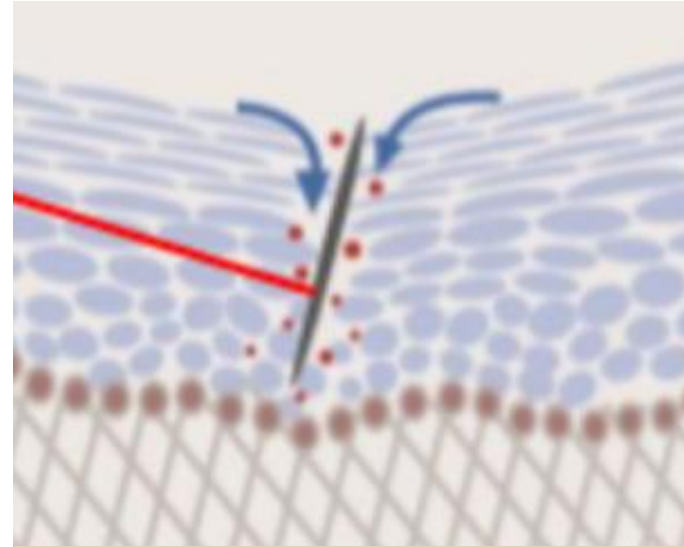
Bio-microneedling(hydrolyzed sponge) is no special certificate required, non - surgical non-traumatic and efficacious.

Skin roller



Creates many tiny damages to deliver essence to the skin to remove wrinkles. It is a traumatogenic treatment.

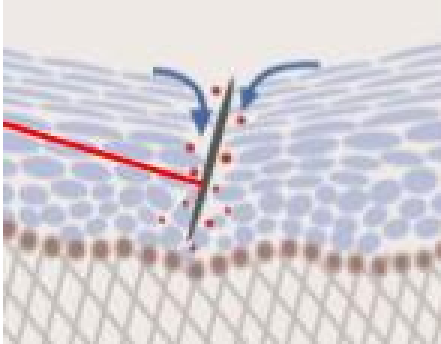
Bio-microneedling



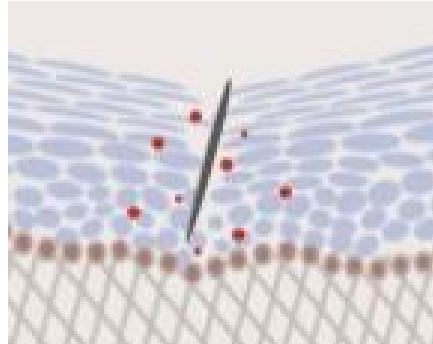
Apply it on face like using face cream, establishing 2 million absorption channels in 48 hours to repair, regeneration and anti-aging. Non-traumatic.

How does Spicule work on skin?

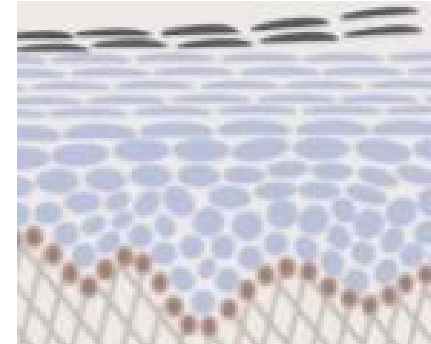
The microneedles are insert into the basal layer by manipulation of **massaging, pressing and rubbing**, and eventually the microneedles will get out of skin with metabolizing and fall off with the keratin .



spicule is inserted into the basal layer of the skin



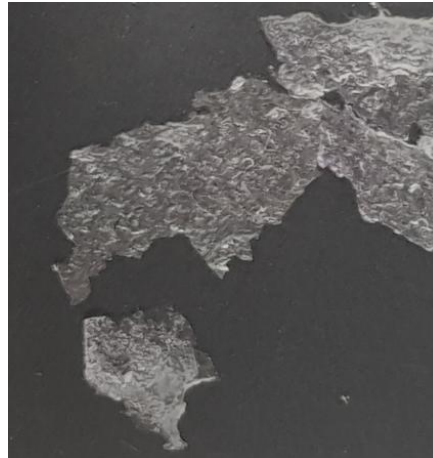
active ingredients released



accelerating metabolism



spicule get out naturally with metabolizing



peeled off keratin



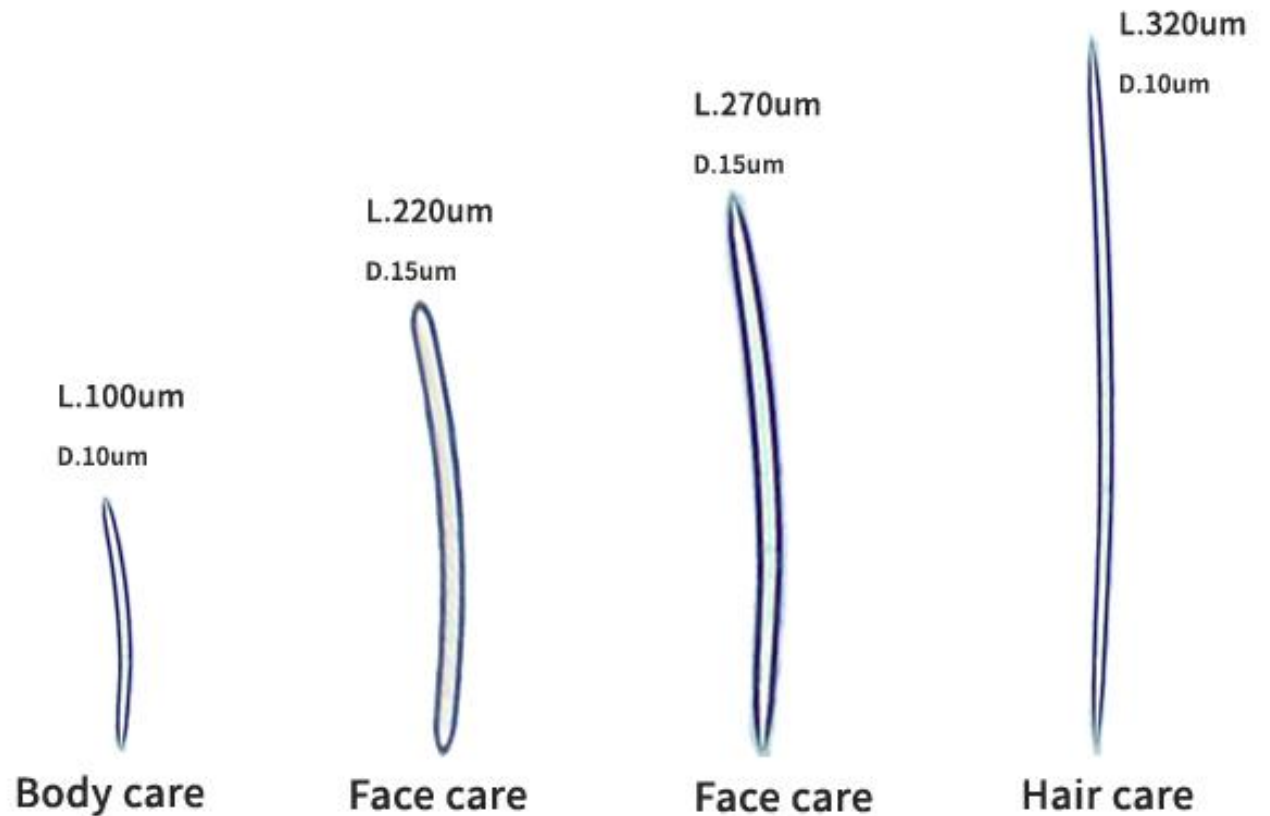
spicules falled off with keratin peeled off



- Product name : Hydrolyzed sponge
- Content: 99%
- Origin: South Korea
- Length: 100 μ m/220 μ m/270 μ m/320 μ m
- Dosage amount: 0.1-9.9%
- **Advantages:** Enzymes fermentation Purification method/safe and effective/high purity, few impurities
- **Formulation instructions**
The main ingredient is siliceous hard protein, which is not easy to react with other substances and can be compounded with almost any cosmetic ingredient. It is recommended to be combined with calming and regenerative repair ingredients.

4 different types of spicule

According to the features of skin in different parts of the human body and the different skin problems that need to be solved, we provide 4 different lengths of microneedles, allowing customers to produce more professional, safe and effective products to meet consumer needs.



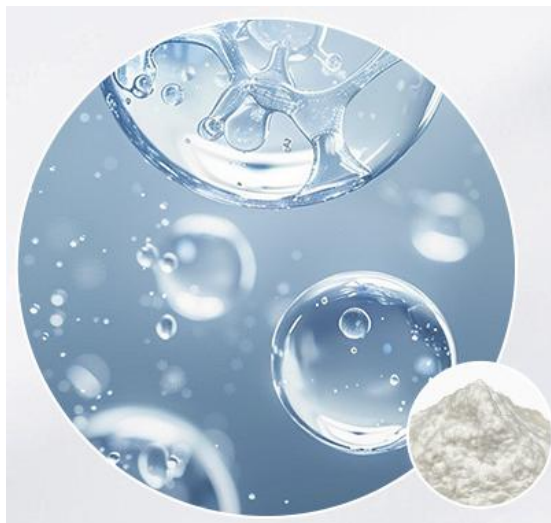
Length	Diameter	%	Origin	Pricking sensasion	Applications
100um	10um	99%	KOR		Body care products
220um	15um	99%	KOR		1.Daily use face care product 2.salon use product for mild or moderate skin problem of face spot/acne it is more appropriate to sentive skin
270um	15um	99%	KOR		Beauty salon products to slove severe skin problem like spot/acne/pigmentation and for anti-aging,whitening, removing wrinkles.
320um	10um	99%	KOR		Hair growth
Brown 270um	15um	99%	KOR		Peeling care

Impregnated spicule

It is a kind of high pressure penetration,which is mean to improve effectiveness of ingredients. collagen /PDRN /CICA , then the ingredient could be released and to work well on skin as the spicule comes into dermis.

Impregnated spicule

It is a kind of high pressure penetration, which is meant to improve effectiveness of ingredients. Spicule's structure is hollow and multihole (porous), through this technology it could be fully filled and coated with ingredients like collagen /PDRN /CICA, then the ingredient could be released and to work well on skin as the spicule comes into dermis.



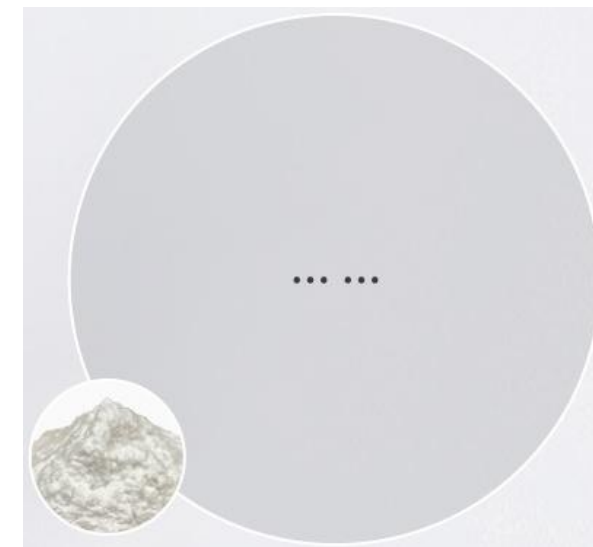
Hydrolyzed
sponge+hydroly
zed collagen



Hydrolyzed
sponge+
+PDRN



Hydrolyzed
sponge
+CICA



Hydrolyzed
sponge+other
ingredients

Documents

The product has passed skin safety tests and skin toxicology tests by international authoritative organizations.



P&K Skin Research Center			
Confirmation of Reliability Assurance			
PNK-22427-I36RE		Version No.	Ver. 1.0
The Safety assessment of Biogenic Silicon Peptide Needle(0.5%) by Primary Skin Irritation Test			
Study title	Duration April 13, 2022 ~ May 06, 2022		
Following basic documentations stored? (Able to check multiple)			
Study protocol	☒ CRF	☒ Informed consent	☒ Contract
Researcher profile	☐ Subject ID Number	☒ Subject selection record	
Registration record	☒ Information for subject informed consent		
Release	☒ Subject compensation standard	☒ Delegation Log	
SEA			
Summary			
	Subject number	Content	
	30 people	Protocol planned number	
	35 people	Screened and selected subject before study initiation	
	35 people	Enrolled and participated subject with Subject ID number distribution	
Screened			
Enrolled/Run-In (Enrolled+Dropped+Ongoing+Completed)			
Dropped (Total)	0 people	Early dropped subject	

Planned	0 people	Protocol planned number
Screened	0 people	Screened and selected subject before study initiation
Enrolled/Run-In (Enrolled+ Dropped+ Ongoing+Completed)	0 people	Enrolled and participated subject with Subject ID number distribution
Dropped (Total)	0 people	Early dropped subject
Dropped	Withdrawn Follow-up fail AE/SAE Etc.	Dropped(Total) = Withdrawn+ Follow-up fail + AE/SAE

kin Research Center

n of Reliability Assurance

AITRE Version No. Ver

cytotoxicity of Biogenic Silicon Peptide Needle

April 19, 2022 ~ May 13, 2022

ble to check multiple)

☐ Informed consent

st ID Number ☐ Subject selection record

ation for subject informed consent

st compensation standard ☒ Delegation Log

iber Content

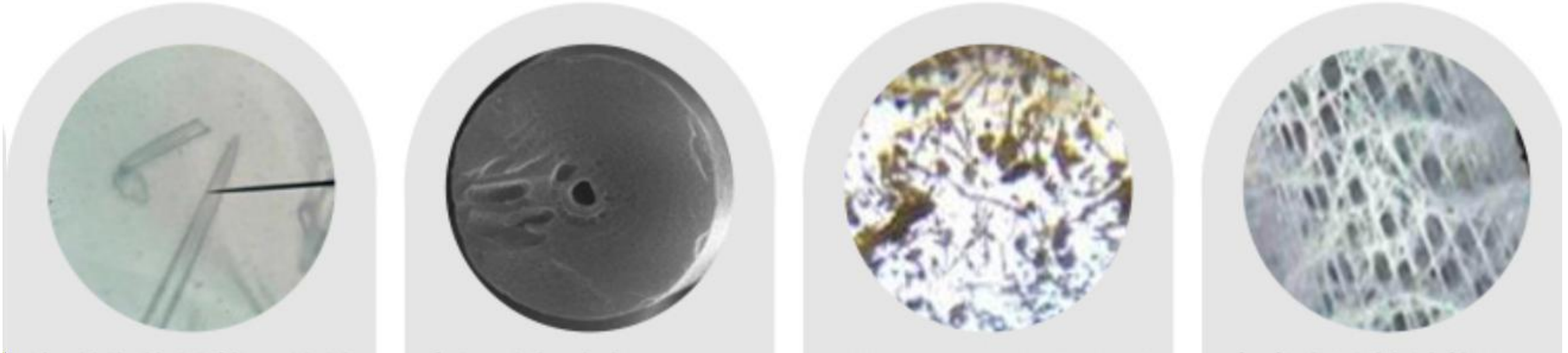
CLINICALLY TESTED

SKIN SAFETY

P&K Skin Research Center

Enzymatic fermentation purification

Below pictures shows the structure of one single spicule is hollow and lacunaris , the harmful solvents is hard to be removed completely from it. The harmful solvents such as strong acid and alkali would be absorbed by skin as the spicule implanted, which is probably cause dermatitis, sensitive skin , pigmentation and dry skin, so we' d better choose the spicule purified by enzymatic fermentation purification.



Enzymatic fermentation purification

Collection

collect spongilla lacustris and dry it

Fermentation

- stirring for 30 minutes after adding the biological enzyme to the raw material.
- keep stirring it in fermenter for 48 hours

Sieve and wash

separate the needle by washing the fermentated spongilla lacustris and sieve it with 100 mesh

Remove impurity

- remove dissolved impurities in a filter
- remove solid impurities by centrifuges
- remove impurities by Precipitation extraction

De-enzyme

- Add water-soluble enzyme inhibitors to remove enzymes
- further remove enzymes and enzyme inhibitors

Drying

Dry it at 80 degrees for 24 hours

Sieving

pass 200 mesh screen

sterilization

by gamma ray irradiation

About PH

Spicule is the bone of spongilla ,which is naturally off-white color instead of pure white.Different with other supplier, we keep it' s original color without bleaching by sodium hydroxide.

PH (pH 7)

It does not cause excessive irritation or discomfort to the skin, while also helping to maintain the skin's healthy condition.



VS

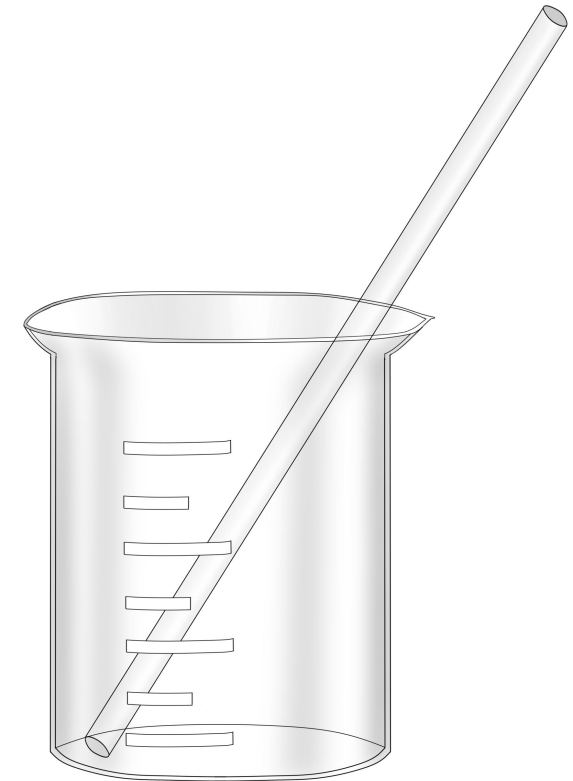


PH (pH 7)

It is more suitable for adding to creams. A pH value greater than 7 may cause the cream to dissolve and change its properties.

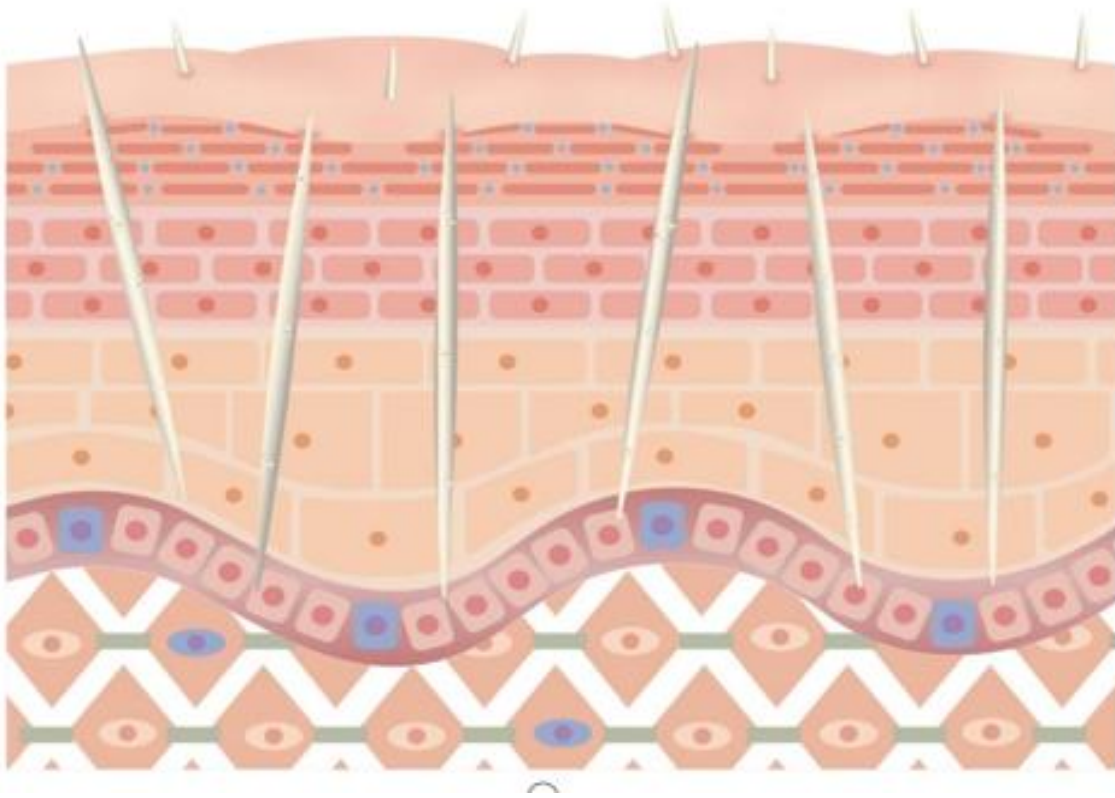


- 1. Do not use the homogenizer after the microneedle is added.
- 2. Spicule should be added to the formula at the last step. Using glycerin or polybasic alcohol as dispersing .
- 3. Do not use the homogenizer after the spicule added, because spicule is brittle .Dispersing spicules throughout the formula evenly only by stirring.



Spicule content

1g ≈ 950000 spicules、high purity、less impurities、less broken spicules.



1g = 950.000

Report by Size Table					
Low Particle Diameter (㎛)	High Particle Diameter (㎛)	Incremental Number	Cumulative Number	Incremental Number /mL (1/mL)	Cumulative Number /mL (1/mL)
160.00	165.00	0	96702	0	950656
165.00	170.00	0	96702	0	950656
170.00	175.00	0	96702	0	950656
175.00	180.00	0	96702	0	950656
180.00	185.00	0	96702	0	950656
185.00	190.00	0	96702	0	950656
190.00	195.00	0	96702	0	950656
195.00	200.00	0	96702	0	950656
200.00	205.00	0	96702	0	950656
205.00	210.00	0	96702	0	950656
210.00	215.00	0	96702	0	950656
215.00	220.00	0	96702	0	950656
220.00	225.00	0	96702	0	950656
225.00	230.00	0	96702	0	950656
230.00	235.00	0	96702	0	950656
235.00	240.00	0	96702	0	950656
240.00	245.00	0	96702	0	950656
245.00	250.00	0	96702	0	950656
250.00	255.00	0	96702	0	950656
255.00	260.00	0	96702	0	950656
260.00	265.00	0	96702	0	950656
265.00	270.00	0	96702	0	950656
270.00	275.00	0	96702	0	950656
275.00	280.00	0	96702	0	950656
280.00	285.00	0	96702	0	950656
285.00	290.00	0	96702	0	950656
290.00	295.00	0	96702	0	950656
295.00	300.00	0	96702	0	950656
300.00	300.00	0	96702	0	950656

Raw material

The raw materials (freshwater sponges) are harvested from Lake Baikal in Russia, far away from human activities, to eliminate pollution from the source, just to ensure that each microneedle implantation into the skin is safe and effective.



01
· Collecting raw materials ·

Collecting spongilla from clean water and select high-quality spongilla as our raw materials



02
· Drying spongilla ·

Drying and purifying the collected spongilla by Professionals

14

Factory's capacity

1000kg/ Month



UNIZLAB, is a company specialized in sponge spicule application and research located in Incheon. It was established in 2018 and is one of the pioneer sponge spicule application and R&D laboratories in Korea. It is committed to research and development of sponge spicule products including acne removal, freckle removal, whitening, hair growth, anti-aging, removal of back/neck wrinkles, eyebrow care, etc.

If you need formula guidance, please feel free to consult us, we would be glad to provide you with leading technical support.





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