

Sodium Polyglutamate

Description

Poly- γ -glutamate (γ -PGA) is a kind of polypeptide in which glutamate is polymerized via γ -amide linkages. It was originally discovered in the marine jellyfish. γ -PGA helps the jellyfish to store water in its fragile tissue, preventing its dehydration in salty sea water. Today, γ -PGA can be gained from traditional Japanese food called natto, made from fermented soybeans. Our Sodium Polyglutamate is biosynthesized from L-glutamic acid using a microbe known as *Bacillus subtilis*. As a multifunctional skincare ingredient, γ -PGA can moisturize and brighten the skin while improving skin health. It enhances skin softness and enhances cell regeneration. It also facilitates exfoliation of old keratin, improving an even skin tone.

Cosmetic applications with γ -PGA can enhance the moisturizing capability of the skin without disrupting its moisture balance, hence preventing it from drying out. Hyaluronic acid (HA) represents a basic component of the skin, helping to maintain moisture in the skin and hence improve its elasticity. Unfortunately, HA can be hydrolyzed quickly by hyaluronidase (HAase). It is reported that γ -PGA can effectively inhibit the HAase activity, increasing and maintaining the content of HA in the skin. Thus, γ -PGA and HA can improve skin hydration, elasticity, and skin appearance in a synergistic way. As a hygroscopic natural skin protein, the Natural Moisturizing Factor (NMF) as well retains the natural hydration of the skin. The NMF includes amino acids which are hydrolyzed from skin matrix proteins (e.g., filament aggregating protein), pyrrolidone carboxylic acid (PCA), lactic acid and urocanic acid (UCA). γ -PGA can increase the production of NMF which further enhances the internal moisturizing ability of the skin. Each γ -PGA monomer has ionized groups like α -COOR, $-\text{CO}$ and $-\text{NH}$, which can absorb electropositive nutrients. Hence, a good embedding delivery system is created, possibly enhancing the efficacy of active ingredients in cosmetic applications.

Efficacy

- increases skin elasticity and moisturizing capacity
- increase the production of Natural Moisture Factor (NMF)
- inhibits hyaluronidase activity

- acts as an embedding delivery system maximizing actives efficacy
- improves skin health
- brightens the skin
- enhances an even skin tone

Appearance

white to off-white granular or powder

INCI

Sodium Polyglutamate

Nature needs no cosmetics,
but cosmetics need nature



Sodium Polyglutamate

Registration

CAS-No.....28829-38-1
EC-No.....-/-

Raw material approved by ECOCERT GREENLIFE,
conform to the COSMOS Standard.

Application

daily cosmetic products
creams and lotions
face masks
gels and ampoules
body care

Preservatives / Stabilizers

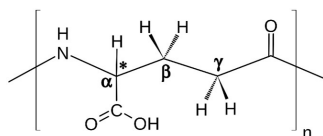
none

Application concentration

skin care formulations.....0.01 - 0.5 %
anti-aging / sun care products.....0.01 - 1 %
skin mask and whitening products.....0.3 %

Characteristics

gamma-PGA content (HPLC).....>= 92 %
pH-value (1 % water solution).....5.0 - 7.5
viscosity (1 %, 60 rpm).....>= 90 cP
loss on drying.....<= 8 %



<https://de.wikipedia.org>

Incorporation

Sodium Polyglutamate is soluble in water.

Toxicology

non hazardous in normal use concentration

molecular formula.....(C₅H₇NO₃)_n
molecular weight (HPLC).....2000 kDa

Storage & Shelf life

Sodium Polyglutamate should be stored in original sealed containers in a dry, well-ventilated and light protected place at temperatures between 10 – 25 °C. Avoid direct sunlight.

In closed original containers the shelf life is 24 months.