



BIOGRÜNDL, S.L.  
POLÍGONO LES FALLULLES, NAVE 34 -SECTOR 2-  
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## TECHNICAL DATA SHEET

### HYDROLYZED SILK PROTEINS / A / HGL / CA11 /



**Trade Name:** HYDROLYZED SILK PROTEINS / A / HGL / CA11 /.

**Product Code:** HSEAHGLCA11.

**INCI Name:** AQUA, GLYCERIN, HYDROLYZED SILK, POTASSIUM SORBATE.

**INCI Status:** Conforms.

**REACH Status:** Low Volume Exemption.

**CAS Number:** 7732-18-5; 56-81-5; 96690-41-4, 24634-61-5/ 590-00-1.

**EC Number:** 231-791-2; 200-289-5; 306-235-8; 246-376-1.

**Origin:** **GLYCERIN:** Vegetable origin.

**HYDROLYZED SILK:** Natural origin.

**POTASSIUM SORBATE:** Synthetic origin.

**Processing:** GMO Free. / No Ethoxylation. / No Irradiation. / No Sulphonation. / No BSE/TSE. / No CMR. / No SVHC. / No Nanomaterial. / No DEG. / No DEHP. / No Formaldehyde. / No Phthalates. /

**Additives:** Preservatives: Potassium sorbate. Paraben Free. / Antioxidants: None. / Other additives: None.

**Solvents Used:** Water and glycerin.

**Appearance:** Clear or slightly opalescent liquid.

**Colour:** Characteristic (yellowish to deep brown).

**Odour:** Characteristic.

**Specific gravity:** 1,050 - 1,300 g/cm<sup>3</sup> (20°C approx.).

**Direct pH value:** 4,5 - 6,5 (20°C approx.).

**Soluble/ Miscible:** Water. Surfactants. Hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

**Ecological Information:** Sustainable.

**Microbial Count:** **Total aerobics:** Max. 300 microorganisms / gram.

**Fungi and yeasts:** Max. 200 microorganisms / gram.

**Pathogens:** Total absence in 1 gram.

**Suggested Use Levels:** 2,0 – 10,0%.

**Suggested Applications:** Hair treatment. Nutritious and protective action on capillary fiber. Hair hydration and restoring.

**Properties:** Nutritious, protective, moisturizing and restorative.

**Industrial packing:** 1Kg., 5Kg., 25Kg., 225Kg.

**Storage conditions:** It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

**Bibliography:** - Atlas Ilustrado de Plantas Medicinales y Curativas, Ed. Susaeta.

- Dumont's grosse Kräuter Enzyklopädie.

- Fitocosméticos ALVAREZ CRUZ i BAGUE SERRANO.

- Gran enciclopedia de las plantas medicinales, BERDONCES i SERRA.

- Plantas medicinales, FONT i QUER.

- Proserpio G., Martelli A., Patri GF.; Elementi di Fitocosmeci; Ed. Sepem / Milano 1983.

- Websites.



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### OVERVIEW

HYDROLYZED SILK PROTEINS by BIOGRÜNDL, S.L., is the result of the acidic hydrolysis of natural silk.

Silk is a fiber produced by silkworm (*Bombyx mori*) which is used to build its own protective shell, the so-called cocoon, to house it during the chrysalis stage until its conversion into a butterfly, the final stage of their life cycle.

The amino acid composition of silk becomes an intermediate between collagen and keratin proteins. Percentagely is as follows:

Hydroxyproline	-	Methionine	-
Aspartic acid	2,2	Isoleucine	0,6
Threonine	1,6	Leucine	0,5
Serine	15,9	Tyrosine	0,4
Glutamic acid	1,8	Phenylalanine	0,3
Proline	0,4	Lysine	0,5
Glycine	38,0	Histidine	0,3
Alanine	34,0	Arginine	0,6
Cystine	-	Tryptophan	-
Valine	2,9		

Table 1. AMINO ACID COMPOSITION OF SILK.

### USE AND DOSAGE

HYDROLYZED SILK PROTEINS by BIOGRÜNDL, S.L., turns out to be excellent for hair treatment, since it exerts nutritious and protective action on capillary fiber. On one hand, giving a characteristic shine, on the other hand, softer and nicer touch. Also, giving to the final products that contain it, hydration and regeneration. It is, also, well suitable in preparations for treatment of brittle nails and toneless, aged or exposed to an unfavorable environment skins.



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If turbidity is observed, it is advisable to previously dissolve the product in a portion of the water provided to manufacture the final product and filter after 12-24 hours.

The recommended concentrations of use are between 2% and 10%. For very special effects the dosage can raise up to 15%.

### PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Clear or slightly opalescent liquid.

**Colour:** Characteristic (yellowish to deep brown).

**Odour:** Characteristic.

**Direct pH value:** 4,5 - 6,5 (20°C approx.).

**Specific gravity:** 1,050 - 1,300 g/cm<sup>3</sup> (20°C approx.).

**Solubility in water:** Fully soluble (20°C approx.).

**Solubility in other solvents:** Insoluble in organic solvents and lipids. Soluble in surfactants, hydroalcoholic, hydroglyceric and hydroglycolic mixtures.

**Heavy metals:** No more than 5 mg/Kg.

**Sulfated ash:** No more than 0,01%.

**Chlorides:** No more than 0,007%.

**Sulfates:** No more than 0,002%.

**Other information:** None.

**Total aerobics:** Max. 300 microorganisms / gram.

**Fungi and yeasts:** Max. 200 microorganisms / gram.

**Pathogens:** Total absence in 1 gram.

### DERMATOLOGY INNOCUOUSNESS

It was performed by the patch test (Patch test) on 10 volunteers. To this purpose, 15% HYDROLYZED SILK PROTEINS by BIOGRÜNDL, S.L., was added to an O/W emulsion; 0,5g. of this emulsion was poured over the patch and attached on the forearm. It is thus maintained for 24, 48 and 72 hours, after which, the given reaction was evaluated, according to the following table of values:

1. No erythema.
2. Slight erythema.
3. Well defined erythema.
4. Severe erythema.

The result was absence of erythema on the 10 volunteers.

On the recommended concentrations, the product is skin innocuous.



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### **STORAGE CONDITIONS**

It is very important to keep the product in well closed containers, away from direct sunlight at temperatures not over 15°C. In case of not having refrigerators, store the product in the coolest and free from artificial light area.

### **INCI DENOMINATION**

AQUA, GLYCERIN, HYDROLYZED SILK, POTASSIUM SORBATE.

### **EFFECTIVENESS TESTS**

**Assay:** Double blind spot trial and subsequent cosmetic evaluation.

**Assayed parameters:** Protective action.

**N (volunteers):** 30 (20 ♀ and 10 ♂).

**Age (volunteers):** 20 - 46 years old.

**Left side part to be treated:**

Placebo, 30 volunteers, suitable cosmetic base.

**Right side part to be treated:**

HYDROLYZED SILK PROTEINS 2%, 15 volunteers, suitable cosmetic base.

**Right side part to be treated:**

HYDROLYZED SILK PROTEINS 5%, 15 volunteers, suitable cosmetic base.



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### Assayed parameters:

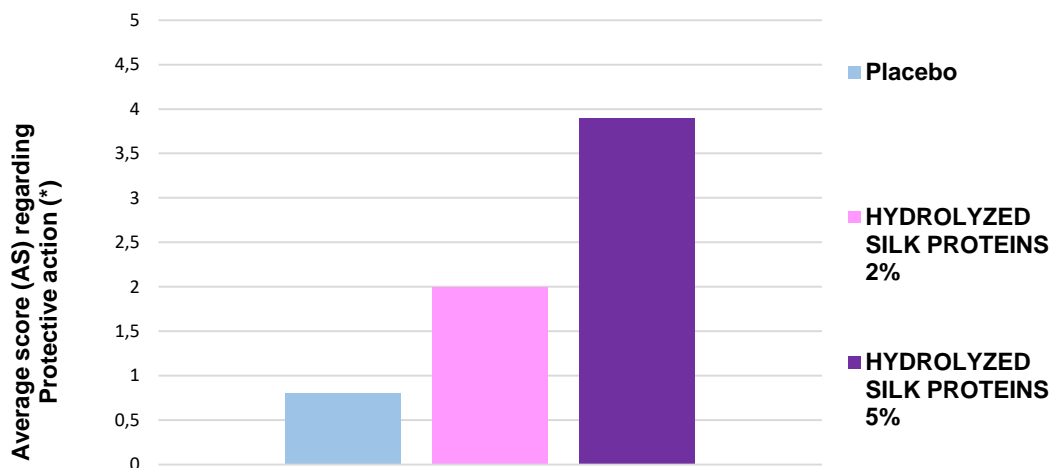
	Assay	N (volunteers)	Age (volunteers)	Placebo	HYDROLYZED SILK PROTEINS 2%	HYDROLYZED SILK PROTEINS 5%	Assay performed (Days)	Results measured (Days)
<b>Protective action</b>	Double blind spot trial and subsequent cosmetic evaluation.	N = 30 20 ♀ 10 ♂	20 - 46	Left side part	Right side part 15 volunteers.	Right side part. 15 volunteers.	D = 30	D' = 1



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### SKIN CONDITION EVALUATION AFTER 30 DAYS



(\*) Protective action was evaluated by direct observation of protection to damage produced in skin volunteers (unfavorable environment).

Total number of days in which the assay was performed (treatment was applied):  
 D = 30 days ( every other day during the effectiveness test).

Total number of days in which the results were measured:  
 D' = 1 day ( effectiveness test last day).

#### Average score:

**Worst result:** Zero limit value is assigned.

**Best result:** Five limit value is assigned.

Score is assigned to obtained results between the two limit values.

Average computation for each obtained results group is done:

Placebo, 2% HYDROLYZED SILK PROTEINS by BIOGRÜNDL, S.L., 5% HYDROLYZED SILK PROTEINS by BIOGRÜNDL, S.L..

#### Results meaning:

AS rank between 0 – 1: No significant changes.

AS rank between 1 – 2: Slight improvement regarding placebo.

AS rank between 2 – 3: Appreciable improvement regarding placebo.

AS rank between 3 – 4: Great improvement regarding placebo.

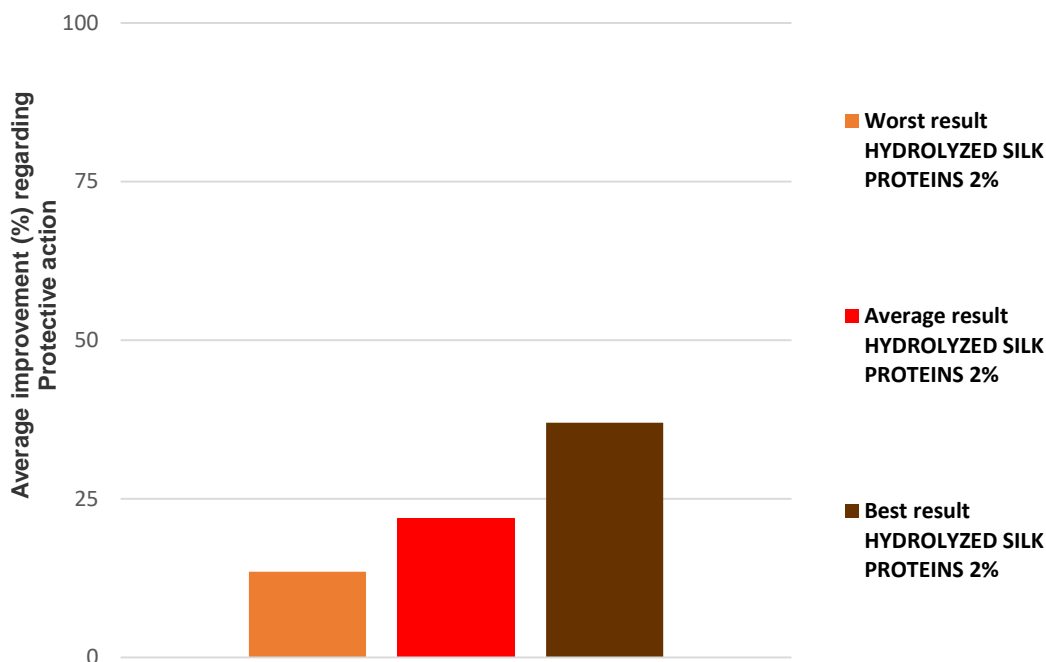
AS rank between 4 – 5: Excellent cosmetic result.



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### HYDROLYZED SILK PROTEINS 2%



#### Results:

Worst result HYDROLYZED SILK 2%: 13,5%.

Average result HYDROLYZED SILK 2%: 22%.

Best result HYDROLYZED SILK 2%: 37%.

#### Results meaning:

AI rank between < 20%: No significant changes.

AI rank between 21 – 40%: Slight improvement regarding placebo.

AI rank between 41 – 60%: Appreciable improvement regarding placebo.

AI rank between 61 – 80%: Great improvement regarding placebo.

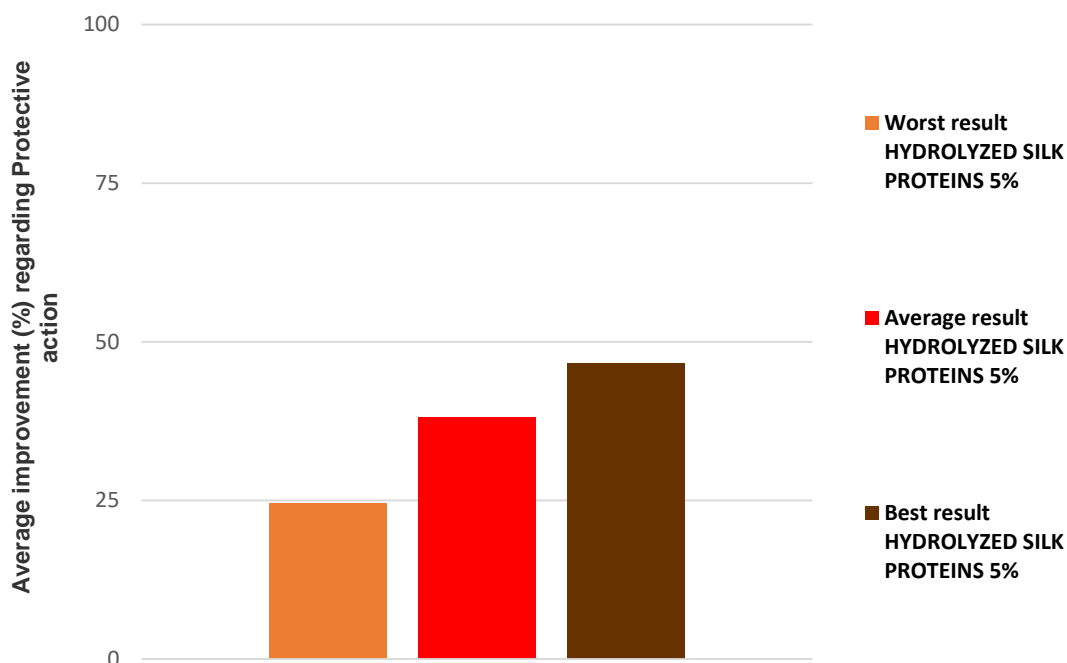
AI rank between > 81%: Excellent cosmetic result.



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### HYDROLYZED SILK 5%



#### Results:

Worst result HYDROLYZED SILK PROTEINS 5%: **24,5%**.  
Average result HYDROLYZED SILK PROTEINS 5%: **38%**.  
Best result HYDROLYZED SILK PROTEINS 5%: **46,5%**.

#### Results meaning:

AI rank between < 20%: No significant changes.  
AI rank between 21 – 40%: Slight improvement regarding placebo.  
AI rank between 41 – 60%: Appreciable improvement regarding placebo.  
AI rank between 61 – 80%: Great improvement regarding placebo.  
AI rank between > 81%: Excellent cosmetic result.