

HydroSal® SilverGlow

Achieve manageable, stylish for gray hair

Gray hair, which results from a reduction in melanin production in the hair follicles, presents several challenges and concerns for many people. Gray hair often becomes more coarse and wiry, which can make it harder to manage and style. This change in texture can be attributed to the loss of natural oils and changes in the hair's structure. Due to its coarser and drier texture, gray hair is more prone to frizz, which can be difficult to control, especially in humid conditions.

HydroSal® SilverGlow (fig 1) is a proprietary technology for better manageability of gray hair. It enables consumers to retain their hairstyle and add a natural shine and youth.

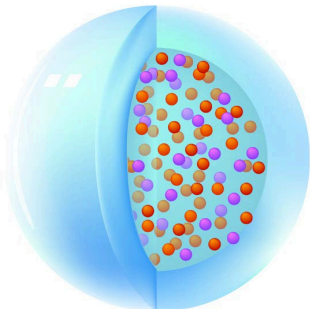


Figure 1. Submicron sphere of HydroSal® SilverGlow.

HydroSal® SilverGlow encapsulates natural functional ingredients (fig 1) and deposits them onto the hair as a thin film that extends the benefits and retains the style for longer.

HYDROSAL® SILVER GLOW

- Natural ingredients (Table 5)
- Lasting protective hair barrier
- Retaining hairstyle for the day



BioPolymer Technology

HydroSal® technology combined with botanical biopolymers and extracts (Table 5) delivers an invisible (Fig 2), lightweight coating to the hair that enables:

- Moisture Retention,
- Strengthening and Protection,
- Improved Texture and Smoothness,
- Enhanced Styling and Hold.

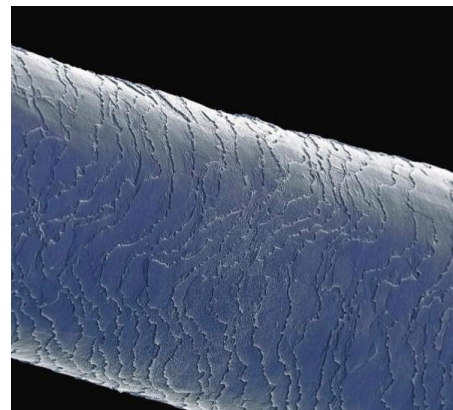


Figure 2. HydroSal® SilverGlow invisible coating



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Qualification Hair Style Memory

The manageability of silver hair refers to how easy it is to style and control (Style memory). Therefore, we assessed the effect of HydroSal® SilverGlow on frizz control, especially in humid conditions, from a leave-in conditioner on curly hair (fig 2 and 3).

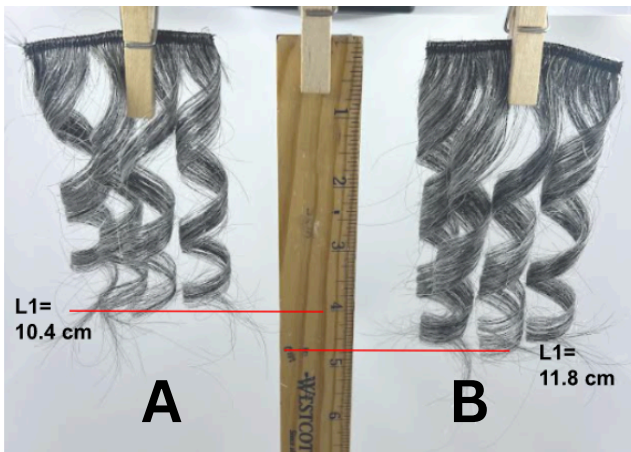


Fig 2: Hair swatches before frizz test.
A- Without, B- With 5% HydroSal® Silver Glow

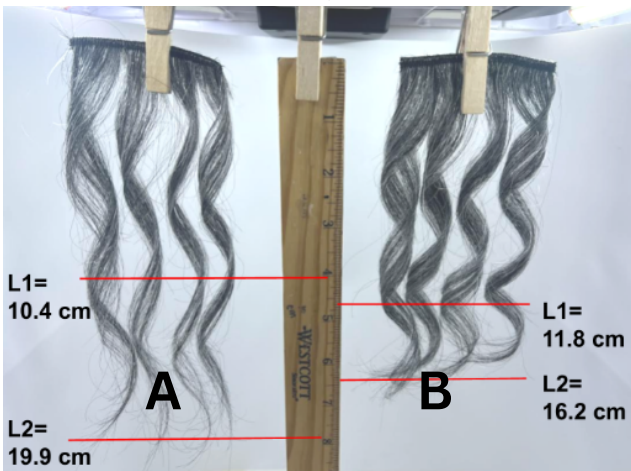


Fig 3: Hair swatches after frizz test.
A- Without, B- With 5% HydroSal® Silver Glow

Experimental method:

A leave-in hair conditioner was applied to hair swatches and then air-dried. Then, the swatches were heated with a curling Iron until they got the curly shape.

One group of swatches, used as control, had a leave-in conditioner containing no technology; the other used the same base but with 5% HydroSal® SilverGlow. 0.1 grams of conditioner per 1 gram of hair.

The hair swatches were placed in a controlled environment with high humidity (>90% humidity) to induce frizz for two hours.

After exposure, we measured the elongation of the curly swatches; length is used as a criterion for frizz and their ability to retain shape. We used a linear scale in each hair swatch.

The hair swatch treated with HydroSal® SilverGlow held the style in place much better than the control (Figs 1 and 2). HydroSal® SilverGlow exhibited over 25% greater manageability and style memory even under high humidity (Fig 4).

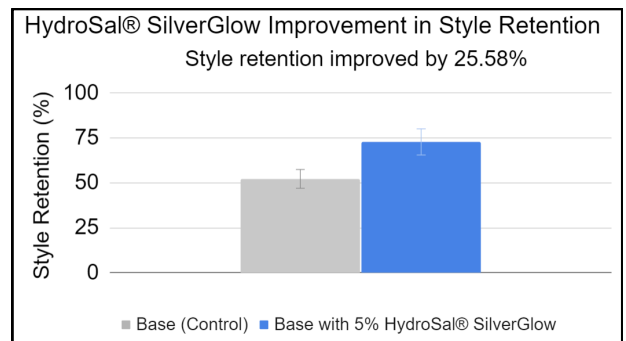


Fig 4: Statistical summary of hair style memory.



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Technical Data Sheet

Table 1: INCI list of HydroSal® SilverGlow 8194-01.

INCI
Astragalus Gummifer Gum
Fucus Vesiculosus Extract
Ganoderma Lucidum (mushroom) Stem Extract
Hydrolyzed wheat protein
Cocamidopropyl PG-Dimonium Chloride Phosphate
D-panthenol (Vitamin B5)
Hydroxypropyl cellulose
Tocopherol
Glycerin
Propanediol
Aqua
*benzylalcohol, potassium sorbate, sodium benzoate, Phenethyl Alcohol, Pentylene Glycol

- The multiple preservatives are part of the raw materials used for this product

Table 2: Specifications of HydroSal® SilverGlow 8194-01.

Specification	Characteristic
Appearance at 20 °C	Translucent Liquid
Odor	Characteristic
Color (Visual)	Yellow to tan
pH (neat)	4.5 - 6.5



Fig 5: Raw HydroSal SilverGlow.



KEEP
STYLE



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Applications

HAIR MASK

Table 3. Formulation of hair mask with HydroSal® SilverGlow Technology.

INCI	Wt (%)
Aqua	62.4
Stearamidopropyl Dimethylamine	5
Hydroxypropyl Guar Hydroxy propyltrimonium Chloride	0.4
Cetearyl alcohol	9
Glyceryl Stearate	2
Isoamyl Laurate	8
Butyrospermum Parkii (Shea) Butter	1
Persea Gratissima (avocado) oil	1
Tocopherol	0.2
Glycerin	5
HydroSal® SilverGlow	5
Phenethyl Alcohol (and) Pentylene Glycol	1
Total	100

LEAVE-IN CONDITIONER

Table 4. Formulation of leave-in conditioner with HydroSal® SilverGlow Technology.

INCI	Wt (%)
Aqua	89
Polyglyceryl-4 Laurate	1.7
Bis-(isostearyl/oleoyl isopropyl) dimonium methosulfate	1.7
Glycerin	1.7
HydroSal® SilverGlow	5
Phenethyl Alcohol (and) Pentylene Glycol	0.9
Total	100

HydroSal® SilverGlow enables easy formulations of leave-in or wash-off products. A single application radiates elegance by maintaining stylish, silky, smooth gray hair. It embraces a natural, beautiful look while eliminating the need for harsh dyes or synthetic chemicals.





HydroSal® SilverGlow can be introduced at the end of formulations at 40-45°C.



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Table 5: Botanical sources and their benefits

Source	Major Benefits for Hair
<p>Reishi Mushroom:</p> 	<ul style="list-style-type: none"> • Polysaccharides (Beta-Glucans): retain moisture in the scalp and hair, keeping them hydrated and reducing dryness and flakiness. These compounds have anti-inflammatory properties that can help soothe an irritated scalp and reduce issues like dandruff or scalp sensitivity. • Proteins and Peptides: strengthen the hair shaft, reducing breakage and improving hair resilience. • Adenosine: known to increase the growth phase (anagen phase) of hair follicles, promoting thicker, hair density and fuller hair. • Phenolic Compounds: protect the scalp and hair from environmental stressors, such as UV radiation and pollution, which can cause damage and lead to hair thinning and loss.
<p>Algae:</p> 	<ul style="list-style-type: none"> • Moisturization and Hydration: polysaccharides, which help to lock in moisture, keeping the hair hydrated, smooths the hair cuticle, leading to enhanced shine, reduce frizz, making the hair more manageable. • Nutrient-Rich: essential vitamins (such as A, C, E, and B-complex) and minerals (like zinc, magnesium, and iodine) that nourish the hair and scalp, promoting overall hair health. Amino Acids supports keratin production, which strengthens the hair shaft and reduces breakage. • Strengthening and Repair: proteins and amino acids help to repair and strengthen damaged hair by replenishing the hair's natural structure and reducing split ends.
<p>Wheat Protein:</p> 	<ul style="list-style-type: none"> • Strengthening Hair Structure: hydrolyzed wheat proteins, penetrate the hair shaft and makes the hair more resilient and less prone to breakage. It also improves the elasticity of hair by enhancing its protein content, reducing the likelihood of snapping or breaking during styling. • Moisture Retention: excellent moisture-binding properties, particularly beneficial for dry or damaged hair that needs extra hydration. Combined with HydroSal technology its creating a protective barrier on the hair, to lock in moisture, and keeping hair soft and smooth.
<p>Brassica Extract:</p> 	<ul style="list-style-type: none"> • Moisturization and Conditioning: essential fatty acids deeply hydrate and moisturize the hair, making it softer and smoother, improve hair texture by making it more manageable and reducing roughness, improves style retention and elasticity, repairs hair damage, reduces frizz and fly aways. • Improving Hair Elasticity: vitamins in brassica extract improve the elasticity of hair, making it more flexible and less prone to snapping or breaking.

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Substantiation

<p>Mushrooms</p>	<p>“Mushrooms are a good source of vitamin D, antioxidants and minerals like iron, selenium, and copper, which are all useful in both <u>promoting healthy and strong hair and preventing hair loss and dandruff</u>. The inclusion of mushrooms and/or extracts into haircare cosmetics is of great potential in the cosmetic industry.”</p>	<ol style="list-style-type: none"> 1. Wu, Y., Choi, M. H., Li, J., Yang, H., & Shin, H. J. (2016). Mushroom cosmetics: the present and future. <i>Cosmetics</i>, 3(3), 22. 2. <i>Journal of Traditional and Complementary Medicine</i>. Link: https://www.sciencedirect.com/science/article/pii/S2225411015300098 3. <i>International Journal of Medicinal Mushrooms</i>. Link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4348212/. 4. <i>Journal of Dermatology</i>. https://pubmed.ncbi.nlm.nih.gov/19453299/ 5. <i>Natural Product Communications</i>. Link: https://journals.sagepub.com/doi/abs/10.1177/1934578X0900400801
<p>Algae</p>	<p>“It <u>increases the luster of hair</u>, has a <u>moisturizing</u> and <u>softening</u> effect on hair.”</p>	<p>Goswami, G., Bang, V., & Agarwal, S. (2015). Diverse applications of algae. <i>Int. J. Adv. Res. Sci. Eng</i>, 4(1), 1102-1109.</p>
<p>Wheat Protein</p>	<p>“The hydrolyzed wheat protein and wheat starch treatment containing a mixture of monomeric and polymeric peptides and oligosaccharides was most effective in <u>improving the tensile strength of dry hair</u>.”</p>	<p>Daniels, G., Nicholson, S., Grant-Ross, P., & Tamburic, S. (2016). An ex vivo comparison of the tensile strengthening properties of protein derivatives on damaged hair. <i>IFSCC Magazine</i>.</p>
<p>Vitamin B5</p>	<p>“Panthenol, the alcohol of pantothenic acid, is assumed to be a humectant and to <u>improve the strength and flexibility</u> of hair”</p>	<p>Haneke, E., & Baran, R. (2010). Micronutrients for hair and nails. In <i>Nutrition for healthy skin: Strategies for Clinical and Cosmetic Practice</i> (pp. 149-163). Berlin, Heidelberg: Springer Berlin Heidelberg.</p>
<p>HydroSal®</p>	<p>Unique encapsulation technology.</p>	<p>https://www.salvona.com/core-technologies</p>

