

# Biopolymers

## Substantive Hyaluronic Acids



**PRODUCT:** Biopolymer BHA-10

**INCI NAME:** Polyquaternium-10 (and) Hyaluronic Acid

**CAS #:** 81859-24-7, 9004-61-9

**EINECS #:** Exempt, 232-678-0

**PRODUCT:** Biopolymer HA-24 Bio

**INCI NAME:** Polyquaternium-24 (and) Hyaluronic Acid

**CAS #:** 98616-25-2, 9004-61-9

**EINECS #:** Exempt, 232-678-0

**PRODUCT:** Biopolymer SA-N

**INCI NAME:** Hyaluronic Acid (and) Serum Albumin (and) Dextran Sulfate

**CAS #:** 9004-61-9, 9048-46-8, 9042-14-2

**EINECS #:** 232-678-0, 232-936-2, unlisted

### KEY BENEFITS

- Highly Substantive to Skin and Hair
- Smooths and Softens
- Moisturizing
- Naturally Derived

### IDEAL FOR USE

- Creams and Lotions
- Eye Creams and Gels
- Facial Serums
- Cleansing Creams
- Foundations
- Tinted Moisturizers
- After-Sun Creams or Gels
- Hair Care Products



The Biopolymer products are complexes of hyaluronic acid and other polymers that deliver exceptional benefits to personal care formulas. Using an exclusive proprietary process, hyaluronic acid and other polymers are combined to form complex networks that provide unique and synergistic activities not exhibited by the individual components.

**Biopolymer BHA-10** is an association complex between a naturally-derived Polyquaternium-10 and hyaluronic acid. The Polyquaternium-10 is derived from cellulose and adheres well to proteinaceous surfaces such as the skin and the hair. The hyaluronic acid found in **Biopolymer BHA-10** is manufactured via a microbial fermentation process for a green and naturally-derived product.

**Biopolymer BHA-10** is substantive to skin and hair, providing extended hydration activity compared to hyaluronic acid alone. Benefits may also be delivered from rinse-off products. **Biopolymer BHA-10** helps to soften, smooth, and lubricate skin and hair. This product is naturally derived and can be used in any natural product formulations.

**Biopolymer HA-24 Bio** is an association complex of hyaluronic acid and Polyquaternium-24. This opalescent viscous liquid combines the moisturization properties of hyaluronic acid with the substantivity of a lauryl-substituted quaternized hydroxyethylcellulose, creating a substantive hyaluronic acid that can be utilized in a myriad of skin and hair care applications. This combination provides a synergistic enhancement of the properties of these two polymers.

**Biopolymer HA-24 Bio** is substantive to the skin and hair in both leave-on and rinse-off products. This substantive hyaluronic acid complex provides softening, smoothing, and lubricating properties to the skin and hair that are readily apparent to the user. The improved substantivity of the product allows for extended hydration activity, beyond what is normally found in hyaluronic acid alone.

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Due to the formation of a viscoelastic matrix, flexible but strong structural films can be formed upon application. **Biopolymer HA-24 Bio** has an excellent rub-in and after-feel and is non-animal derived.

**Biopolymer SA-N** is a unique three-part polymer complex that physically lifts wrinkles to smooth the skin, gives a soft focus effect to optically reduce the appearance of wrinkles, and moisturizes the skin. **Biopolymer SA-N** is comprised of hyaluronic acid, serum albumin and dextran sulfate.

Serum albumin is a highly charged water soluble protein which forms a contractile film on the skin that lifts wrinkles to reduce their depth. However, one of its main drawbacks is that it quickly whitens and flakes, making its use problematic in skin care formulations. Complexing the albumin with hyaluronic acid helps to hydrate and plasticize the film, which ultimately eliminates the whitening and flaking effect.

Dextran sulfate is used to enhance the physical reduction of the wrinkle depth by providing an optical soft-focus effect. At the skin's pH, the dextran sulfate changes the film from transparent to translucent, thus affording a soft-focus and tightening effect in one product.

**Biopolymer SA-N** both physically lifts wrinkles and imparts an optical soft-focus effect to immediately reduce the appearance of wrinkles. **Biopolymer SA-N** provides substantive moisturization, with an excellent skin feel. This product also helps to reduce the oily feel of some creams and lotions and can aid in pigment dispersion in color cosmetics.

### TYPICAL PROPERTIES

|                       | BIOPOLYMER BHA-10               | BIOPOLYMER HA-24 BIO       | BIOPOLYMER SA-N                                 |
|-----------------------|---------------------------------|----------------------------|---|
| Appearance @25° C     | Opalescent, viscoelastic liquid | Opalescent, viscous liquid | Opalescent greenish yellow, viscoelastic liquid |
| Odor                  | Very mild                       | Low, characteristic        | Low, characteristic                             |
| Solubility            | Water                           | Water                      | Water   |
| Recommended Use Level | 1 – 3%                          | 2 – 4%                     | 1 – 2%  |

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