

## TECHNICAL DATA SHEET

**Product Name:** Acetyl Tetrapeptide-5

**INCI Name:** Water, Acetyl tetrapeptide-5, Caprylyl Glycol, Ethylhexylglycerin

**CAS:** 7732-18-5, 820959-17-9, 1117-86-8, 70445-33-9

**Sequence:** Ac-bAla-His-Ser-His-OH

**Synonyms:** N-Acetyl- $\beta$ -alanyl-L-histidyl-L-seryl-L-histidine; Eyeseryl; (3-Acetamidopropanoyl)-L-histidyl-L-seryl-L-histidine

**Chemical Classification:** Mixture

**Functional Category:** Skin conditioning agent

**IUPAC Name:** (2S)-2-[[[(2S)-2-[[[(2S)-2-(3-acetamidopropanoylamino)-3-(1H-imidazol-5-yl)propanoyl]amino]-3-hydroxypropanoyl]amino]-3-(1H-imidazol-5-yl)propanoic acid

**Origin of Raw Material:** USA/China

**Description:** Acetyl Tetrapeptide-5 is a peptide composed of four amino acids linked by peptide bonds. While the exact sequence of amino acids in Acetyl Tetrapeptide-5 is not publicly available due to being patented, typically, each amino acid contributes different characteristics such as hydrophobicity, charge, and size, which affect the overall behavior of the peptide. The configuration (specific spatial arrangement of atoms) and conformation (shape the molecule assumes as a result of rotations around bonds) can influence how well the peptide interacts with cellular receptors or other biological targets. The structure of this peptide, including its configuration and conformation, enables it to effectively act on the skin, aiding in hydration, reducing puffiness, and improving skin elasticity, especially in cosmetic products for the eye area. Adding an acetyl group to the N-terminal end of the peptide increases its hydrophobicity, enhancing its stability and ability to penetrate deeper layers of the skin. The acetyl group is an acyl group derived from acetic acid, represented as  $-\text{COCH}_3$ . This modification can help protect the peptide from degradation by peptidases, enzymes that would otherwise break down peptide bonds. The product (mixture) Acetyl Tetrapeptide-5 is a transparent liquid,

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odorless, soluble in water. The peptide content is 1000 ppm. According to Regulation (EC) No.1272/2008, the ingredients present in the mixture are not hazardous substances. The pH of the solution ranges from 2 to 6.

### Skin Effects and Benefits:

- **Improved microcirculation:** Acetyl Tetrapeptide-5 contributes to improving capillary blood flow. It facilitates the transport of oxygen and nutrients to skin cells, which is crucial for skin health and vitality. It also helps reduce capillary permeability by stabilizing capillary walls. In addition to improving blood flow, Acetyl Tetrapeptide-5 may stimulate lymphatic drainage. The lymphatic system helps remove excess fluid and waste products from tissues. By stimulating lymphatic drainage, this peptide helps reduce fluid accumulation that can cause swelling and dark circles around the eyes.

- **Anti-inflammatory effects:** Acetyl Tetrapeptide-5 has potential anti-inflammatory effects that can reduce skin inflammation and irritation. By reducing inflammation, the peptide helps decrease redness and swelling, making the skin smoother and more even-toned.

- **Improved skin elasticity:** This peptide can stimulate the production of collagen and elastin, key proteins that maintain the structure and elasticity of the skin. By increasing the levels of these proteins, the skin becomes firmer and more elastic, reducing the appearance of fine lines and wrinkles.

- **Skin hydration:** In addition to directly affecting structural proteins, Acetyl Tetrapeptide-5 can improve skin elasticity by helping maintain skin hydration. Hydrated skin is plumper and has better resilience, contributing to a more youthful appearance.

- **Antioxidant protection:** This peptide can provide antioxidant protection, combating free radicals that can damage collagen and elastin. This reduces the degradation of these important proteins, thereby maintaining and improving skin elasticity.

**Directions for Use:** Typically used at concentrations of 1 to 10%. It is part of the water phase of the emulsion system. For external use only.

**Application:** The peptide solution of Acetyl Tetrapeptide-5 with anti-edema properties and proven effectiveness in reducing swollen bags is specifically designed for formulations for eye care. The product is used in eye creams, lotions, and masks, as well as in anti-aging lotions and creams.

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**Storage:** Store in the refrigerator.

**Animal Testing:** The substance has not been tested on animals.

**GMO:** Not GMO.

**Vegan:** Does not contain components of animal origin.

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