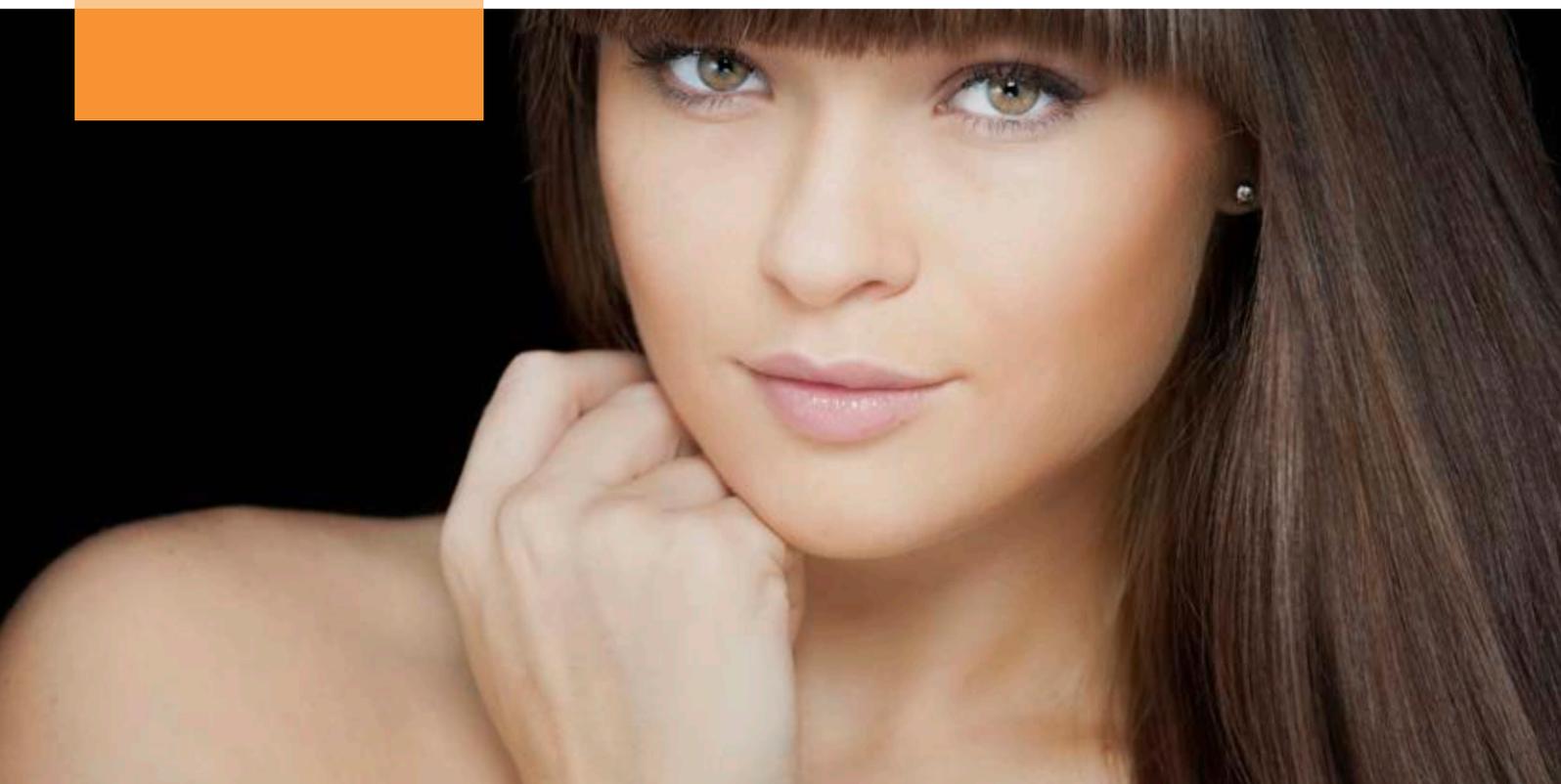


# Keramino 25 PF

## Protective Protein for Hair



INCI Name: Keratin Amino Acids

SAP Code#: 140700

### Key Product Attributes

- Enhances hair strength
- Improved moisturization
- Film-forming protein
- Paraben-Free

### Product Information

Keramino 25 PF is made by carefully hydrolyzing sheep's wool down to a low molecular weight and consists of a mixture of free amino acids, dipeptides, tripeptides and tetrapeptides. Keramino 25 PF is sold as a 25% active, well preserved, easy to use aqueous solution.

Keratin is a highly insoluble protective protein composed of 18 amino acids which is synthesized intracellularly by the epidermal cells.

Keramino 25 PF will augment the free amino acids naturally present in the sebum and in the hair. Free amino acids naturally present in the hair play an important role in maintaining the moisture balance of the hair, which helps to keep it supple. The low molecular weight of Keramino 25 PF will enable it to penetrate into the hair helping to improve the "healthy" appearance and provide moisturization. Keramino 25 PF will not coat the hair in the same way as the commonly used proteins and polypeptides.

# Role of Amino Acids in Cosmetics

## Benefits to Hair

- Ability to enhance moisture binding ability of the hair
- Ability to penetrate into the hair
- Will give the hair sparkle, shine and bounce
- Augment the free amino acids naturally present

## Benefits to Skin

- Augment the free amino acids present in the NMF (largest single component)
- Ability to penetrate down through the top six layers of the epidermis, enhancing the moisture content of skin
- Will give skin a soft, healthy, moist appearance

## Physiological Benefits

Keramino 25 PF - Keratin Amino Acids - represent the natural way to add the free amino acids essential for the healthy appearance of keratinaceous substrates such as the hair, skin and nails. Consumers are aware that hair is composed of protein known as keratin, and can readily see the sense in trying to rebuild and condition their hair using Keramino 25 PF as a basic building block.

Chemical Structure of Keramino 25 PF



R = Side chain group representative of the above listed amino acids.

The low level of cystine is due to its lack of solubility and value as a food/pharmaceutical ingredient.

Solubilities (at 5%)	
Water	Soluble
Glycerin	Soluble
Propylene Glycol	Soluble
Ammonium Lauryl Sulfate	Soluble
Water/Alcohol (60/40)	Soluble
Mineral Oil/Esters	Insoluble

Note: Amino acids are amphoteric in nature and will be zwitterions between a pH of 2 to 10. Due to their small molecular size and charged nature they should be regarded as behaving in a similar fashion to salts when formulating.

Typical Properties	
SAP # Keramino 25 PF	140700
Appearance	Clear to slightly hazy dark amber liquid
Odor	Characteristic amino acid
pH	4.5-7.0
Non-Volatile Matter	27-32%
Ash	6.0% Max
Microbial Content	500 opg max., no pathogens
Recommended Use Level	3-5%

Typical Amino Acid Analysis	
Alanine	44
Arginine	135
Aspartic Acid	92
Cystine/Cysteine	14
Glutamic Acid	153
Glycine	42
Histidine	12
Isoleucine	20
Leucine	36
Lysine	41
Methionine	4
Phenylalanine	28
Proline	101
Serine	125
Threonine	86
Tyrosine	4
Tryptophane	3
Valine	62
Residues/1000	



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