

Plant-derived Hair Conditioning Ingredient

# Promois WJ-SP

Hydrolyzed Pea Protein

The raw material ECOCERT and COSMOS approved.



COSMOS APPROVED

## Advantages

### Excellent hair-repairing effect

- Adsorbs and penetrates to damaged hair
- Repairs and smoothens hair surface
- Revitalizes hair strength
- Restores hair moisture and prevents dryness



## About Pea protein

### Properties of pea ; *Pisum sativum* L.

#### ▶ Similar amino acid composition to that of keratin

Amino acid composition of pea protein is similar to that of keratin, main component of hair. So it can expect a excellent hair repairing effect.

#### ▶ GMO-free product

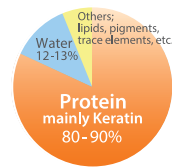
GMO modified Pea has not been distributed in the marketplace.

#### ▶ Non allergic product

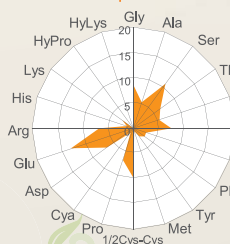
Pea is not regarded as food allergens required to be labeled under the CODEX\* and food regulation of USA, EU and Japan.

\* CODEX, the Codex Alimentarius Commission, is an intergovernmental body developing food standards, guidelines and codes of practice under the Joint FAO/WHO Food Standards Programs.

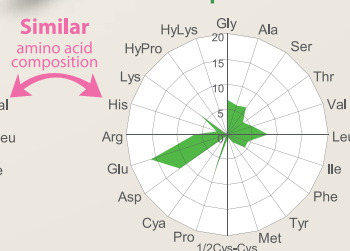
Constituents of human hair



Keratin  
main component of hair



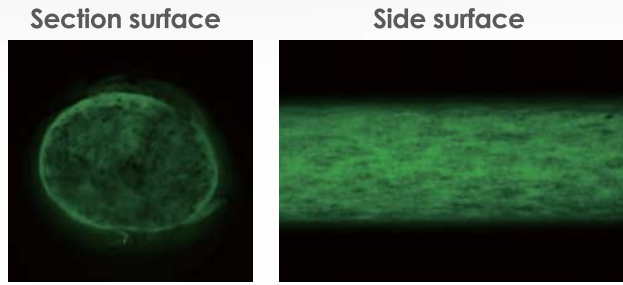
Pea protein



## Evaluation tests

### Absorbs and penetrates to damaged hair

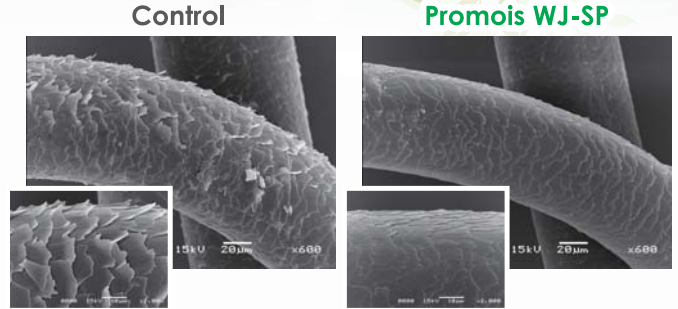
#### Fluorescence labeling



5 times permed Asian hair was treated with FL (Fluorescein)-labeled Promois WJ-SP (1.0% aqueous solution) at 40 deg C for 30 min, washed with water and dried. Hair sample was observed by a fluorescence microscope.

### Repairs and smoothens hair surface

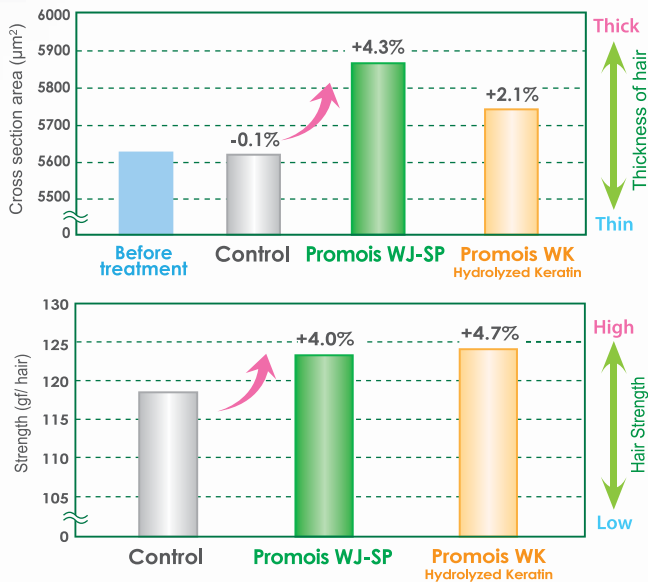
#### SEM\* observation



Bleached Asian hair was treated with Promois WJ-SP (1.0% aqueous solution) at 40 deg C for 10 min, washed with water and dried. This treatment was cycled 10 times. Control was treated with water. Hair samples were observed by a SEM.  
\* Scanning electron microscope/ JEOL JSM-5800LV (JEOL Ltd.)

### Revitalizes hair strength

#### Measurement of cross section and tensile strength

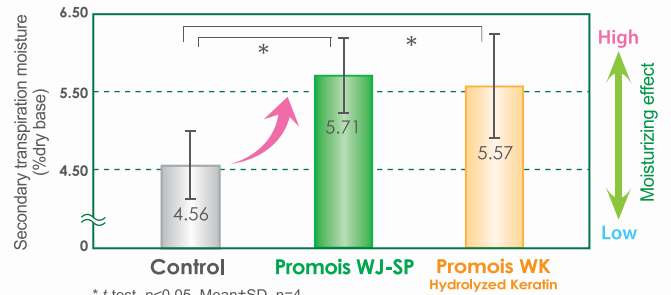


Bleached Asian hair was treated with Promois WJ-SP (1.0% aqueous solution) at 40 deg C for 10 min, washed with water and dried. This treatment was cycled 10 times. Control was treated with water. The cross section area and tensile strength of hair samples were measured.

Cross section area; Automatic diameter analyzer/ SK-2000 (Kato Tech Co., Ltd.)  
Tensile strength; High sensitivity hair rheology analyzer/ KES-G1-SH (Kato Tech Co., Ltd.)

### Restores moisture and prevents dryness

#### Measurement of secondary transpiration moisture\*



\* t-test  $p < 0.05$ , Mean  $\pm$  SD, n=4

Bleached Asian hair was treated with Promois WJ-SP (1.0% aqueous solution) at 40 deg C for 10 min, washed with water and dried. This treatment was cycled 10 times. Control was treated with water. The secondary transpiration moisture of hair samples were measured.

#### \* Secondary transpiration moisture

Moisturizing effect was evaluated by measurement of moisture inside of the hair. The sample hair was heated at 65 deg C (assumed the temperature of hair-dryer) for 40 min, and then the hair was heated at 180 deg C (assumed the temperature when whole hair moisture transpires) for 30min. As shown in Figure, based on the difference of weights between A and B, the secondary transpiration moisture was calculated according to the following equation.

$$\text{Secondary transpiration moisture (\%dry base)} = \frac{(A - B)}{B} \times 100$$

## Product information



The raw material ECOCERT and COSMOS approved.

Promois WJ-SP is a raw material approved by ECOCERT in accordance with the ECOCERT Natural and Organic Cosmetics Standard and the COSMOS Standard.

### Basic information

INCI Name	Hydrolyzed Pea Protein
CAS No.	222400-29-5 or 100209-45-8
Active component	100%
Additives	None
Number-average molecular weight	500
REACH (EU)	Polymer
IECIC 2015 (China)	Listed

\* IECIC 2015 refers to "已使用化妆品原料名称目录 (The Inventory of Existing Cosmetic Ingredients in China)" issued by CFDA on December 23, 2015.



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