



LABORATOIRES  
SÉROBIOLOGIQUES  
Division de **Cognis France**

CASHMILAN® LS 9604

CASHMERE KERATIN

HAIR

### Keratin and hair

Keratin is the main constituent of hair. Keratin is a family of fibrous proteins with high sulfur content.

It is synthesized inside the germinal cells. On the upper layers, the cells are completely keratinized.

Keratin contains most of the amino-acids but especially the amino-acid called Cysteine.

The amino-acids are disposed according to a chain which has an unique sequence for each specie.

They are linked by hydrogen bounds stabilizing the structure characterized by its spiral form.

The partial keratin denaturation leads to the destruction of the hydrogen bounds, the spiral structure is deteriorated.

By this fact we can see that the physical properties of hair are directly linked to the properties of keratin:

- elasticity,
- resistance to mechanical, chemical and physical agents,
- a high water absorption capacity,
- electrostatic properties.

### Weak hair

Weak hair is often thin and slightly keratinized. It has a lack of structure and tonicity.

Repeated permanent waves, irritant surfactant uses, UV irradiations or environmental aggressions are liable for the keratin denaturation and for high damages of cuticle. In that case, the use of keratin in hair care is very effective due to its softening and repairing effects on altered hair.

### Fragile hair

Fragile hair is dehydrated and/or it has a lack of sebum. Hair becomes dry and can break easily.

A study of that type of hair shows that it is altered, the S-H bounds are decreased with as, a consequence, hair elasticity is decreased.

Due to the low content of sebum, hair is dull.

Hair care products containing keratin derivatives are necessary to cure fragile hair.

## CASHMILAN® LS 9604

### DEFINITION / COMPOSITION

CASHMILAN® LS 9604 is a partially hydrolyzed keratin from cashmere wool.

#### Main components:

- a solution of hydrolyzed cashmere keratin (active fraction: ~20%).

Molecular weight: ~7000 Da.

### HAIR BENEFITS

CASHMILAN® LS 9604, thanks to its composition, is a hair-identical protein hydrolysate.

CASHMILAN® LS 9604 hair benefits are:

- substantivity**,
- conditioning**,
- strengthening** the cohesion of the cuticular scales of the stem,
- softening** effect against the irritation of the scalp due to the anionic surfactants used in the formulation of shampoos,
- improvement of **protection** and **repair** of damage induced by the UV irradiations,
- improvement of **ease of combing**,
- improvement of hair "**tonicity**".

### COSMETIC USE

CASHMILAN® LS 9604 is suitable for:

- conditioning, protecting and repairing hair care,
- shampoos,
- balms, lotions, aqueous and hydro-alcoholic products.

Especially for:

- thin hair,
- dull hair,
- hair deteriorated by the aggressions of the environment, and UV...,
- hair deteriorated by unadapted hair treatments.

### DOSAGE / SOLUBILITY / MODE OF INCORPORATION

- 1. Dose of use:** 2 to 5%.
- 2. Solubility:** CASHMILAN® LS 9604 is water soluble, slightly soluble in ethanol, insoluble in oils.
- 3. Mode of incorporation:** CASHMILAN® LS 9604 will be introduced at the end of the process below 50°C. Suitable pH: between 3 and 7.

### ANALYTICAL CHARACTERISTICS

- 1. Aspect:** amber liquid with a characteristic odor.
- 2. Specifications:** upon request.

### TOLERANCE

Good.

### STORAGE

In its original packaging at 15 - 25°C.

### EFFICACY

Test summaries overleaf.

### INCI NAME

Water (and) Hydrolyzed Keratin.

### SUPPLIER

Laboratoires Sérobiologiques, division de Cognis France.

ACTIVE INGREDIENT FOR COSMETOLOGY

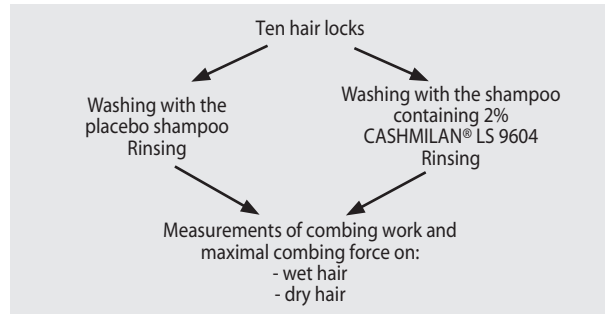
## EFFICACY TESTS

### HAIR CONDITIONING EFFECT

#### Aim

The ease of combing of hair treated with a shampoo containing 2% CASHMILAN® LS 9604 was compared to that obtained with a placebo shampoo on wet and dry hair. The evaluation was performed by measuring the force and work developed while combing treated wet and dry hair locks. The lower the combing force, the easier the combing.

#### Protocol



#### Results

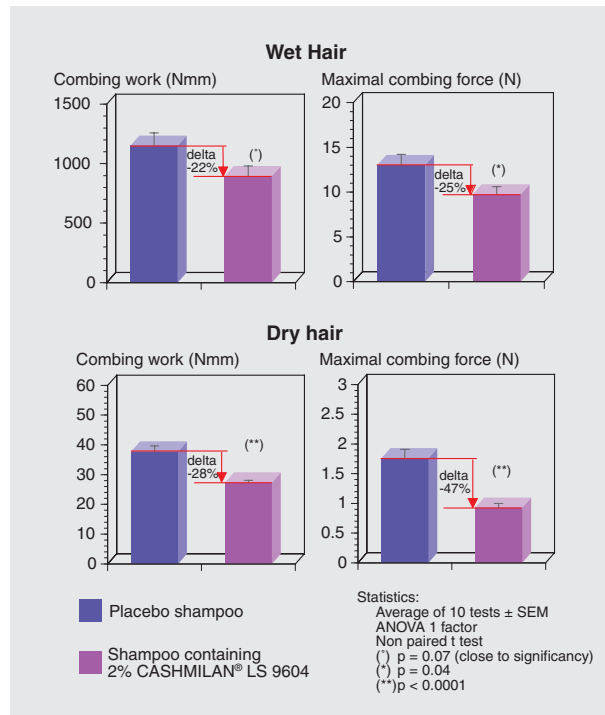


Fig. 1 - Evaluation of ease of combing.

#### Conclusion

The shampoo containing 2% CASHMILAN® LS 9604 reduces the combing force and maximal combing work of treated hair more than placebo shampoo. Hair is easier to comb and softer. CASHMILAN® LS 9604 shows a significant hair conditioning effect.

### HAIR PROTECTIVE / STRENGTHENING EFFECT (TRACTION TEST ON SMALL HAIR LOCKS)

#### Aim

To demonstrate the strengthening effect of a shampoo containing 2% CASHMILAN® LS 9604 on permed hair in comparison to a placebo shampoo.

#### Protocol

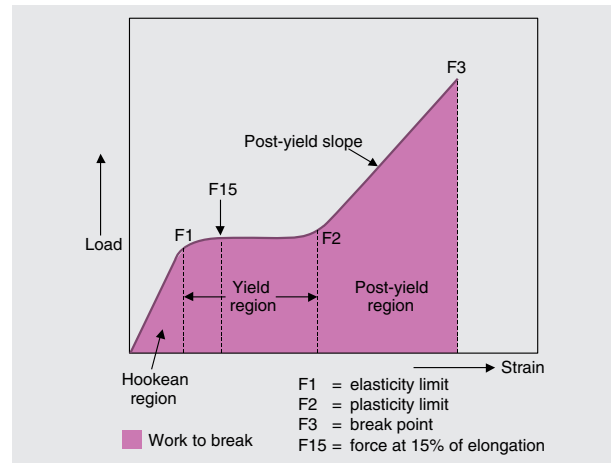
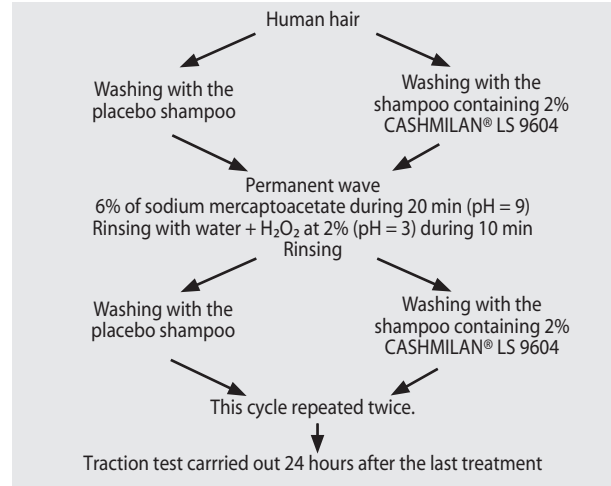


Fig. 2 - Illustration of tensile curve and evaluated mechanical parameters.

#### Results

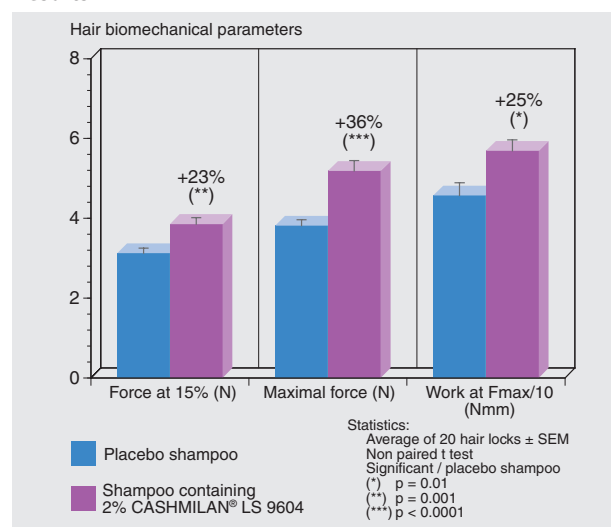


Fig. 3 - Traction test on permed hair.

#### Conclusion

The shampoo containing 2% CASHMILAN® LS 9604 showed a good and significant strengthening effect on permed hair in comparison to the placebo shampoo.