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A new vegetable surfactant. A green surfactant

The cosmetic market is one of the most dynamic and innovating worldwide. Consumer needs stimulate the continuous evolution of formulas. The new trend is towards natural, safe and evaluated products

Young consumers particularly like natural cosmetics with raw materials extracted from vegetable sources and coming from traditional or ethnical uses.

Among cosmetic ingredients (more than 10,000), surfactants are the most important ingredients for hygiene products (skin and hair washing).

ORIGIN AND PROPERTIES

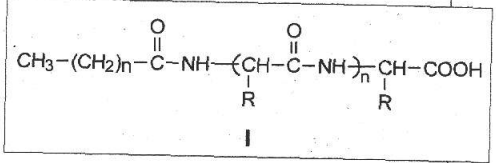
The *Olivoil glutinate* is a new, patented vegetable surfactant, combining the very exceptional fatty acid profile of Mediterranean olive oil (around 85% of unsaturated fatty acids and vitamin E) with vegetable proteins, extracted from wheat by gluten hydrolysis. The gluten corresponds to the proteinic part of the wheat and is the nitrogen reserve used by seeds during germination for growth and cell multiplication. The nitrogen group is also an important substantiving agent for hair conditioning and restructuring. Essential fatty acids and proteins allow to achieve a new molecule having interfacial properties and assuring a perfect compatibility with the human body (experimented high tolerance for skin and high substantivity for hair) and with the environment (high biodegradability).

Table I – Typical product characteristics

INCI name	Hydrolyzed Wheat Protein Olivate
CAS number	68188-38-5
EINECS number	Not applicable
Aspect	solution
Color	yellow
Odour	slight, typical
Dry matter:	> 26 %
pH (at 10° in water/ethanol 75/25)	7 ± 0,5
Viscosity (25°C, mPs)	500
Boiling point	> 100°C
Flash point	> 100°C
Water solubility	soluble

CHEMICAL PROFILE

From condensation reaction between the amino group of the hydrolyzed wheat proteins and the carboxyl group of the fatty acids of olive oil, it is possible to prepare an amide showing the surfactant's structure **I**.



I

The *Olivoil glutinate* is based only on vegetable molecules with a complete absence of chemical impurities (no ethylene oxide or sulphate) (Table I).

The chemical structure of *Olivoil glutinate* shows a strong potentiality as a middle detergent for bath, shampoos and personal hygiene cosmetics, with an interesting dirt removal mechanism (Figure 1). The fatty acid part (unsaturated fatty acid) have a strong affinity with lipophilic compounds. The grafted peptides, very polar, have a strong affinity for the aqueous components.

The dirt is completely removed from the skin that results clean, smooth, hydrated, without tension and irritation.

Figure 1- Mechanism of the dirt removal activity of the *Olivoil glutinate*