

## Sustainable cosmetic ingredients ...

*Ingredients obtained from the by-products of olive oil*

# ... from olive fruit oil process

**Olifeel ingredients from Brasca help rebalance the original protective film of the skin, thanks to their biomimetic properties with intercellular lipid matrix and sebum. What is more, these ingredients are obtained from by-products of olive with the help of a new eco-sustainable patented technology.**

photo: Ifong, Shutterstock.com

**V**egetal oils can be glycerol esterified with free fatty acids such as stearic or palmitic acids. Such vegetal oils are sources of lipids that can become part of the intercellular lipid matrix and sebum, as they are similar to the natural lipid content produced by the skin. This process is called biomimetism. The molecules of these lipids can replace the damaged natural components of the skin, and thus restore a powerful intact barrier. With the help of the right cosmetic product application, in form of emollient agents, skin hydration can be modified and maintains the skin barrier effectively.

Natural cosmetic ingredients are moving more and more into the lime-light as well as the ethical processes used to obtain them. Thus, sustainable development becomes a parameter of interest in the development of many of these products. Sustainability is measured in the context of three constant parameters: **Economy, Environment and Society**. A project developed by our Italian company focused on water footprint, innovation, local organic agriculture and maintenance of local biological diversity in a sustainable economics context.

We pursue sustainable development by continuously studying and do-

ing research on ingredients that meet the NIP (No Impact In Progress) criteria in regards to efficacy (high-performance ingredients tested and appreciated for their technological or efficient aspect), safety for the people (key component of the company's philosophy: The ingredients are stringently controlled, ensuring consumer safety), safety for the environment (informing about the importance to choose, when possible, eco-friendly ingredients, ensuring lower impact on the environment).

A new eco-sustainable patented technology was developed to investigate the benefits of using the by-products of olive in cosmetic applications.

Here, first and foremost high-quality olive fruits are selected. These fruits stem from a transparent and traceable Italian supply chain, where only soft technologies maintaining a natural profile are involved. The result is a range of high performance, flawless substance materials, with specific cosmetic functions, obtained from high purification of fractions of *Olea Europaea*. By isolating purified fractions, each element of the line is pure, too. This allows formulators to choose a natural ingredient for its chemical nature, versatility of functionality or biological application.

The process of olive fraction purification starts once they have left the food production chain. It is the same esterification process as the one that naturally occurs in olives.

Three main activities have been investigated: the natural actives carrier and skin-feel enhancer, the natural W/O emulsifier and emollient, and the natural touch and stabilising rheology modifier.

### Natural actives carrier for enhanced skin-feel

Due to its unique composition and glyceride nature, **Olifeel TD7525W** (Triolein Glyceryl Dioleate), is different from other natural oils. It has been developed through:

- a 75% skin affinity focus (Triglycerides are naturally present in human skin, therefore they provide this ingredient with a light and evanescent film and a good skin biocompatibility and act as a carrier of lipophilic ingredients);
- a 25% formula affinity focus (Diglycerides help to stabilise the formulations thanks to their polar nature and provide the finished product with an interesting stable feel). The genuine skin-feel without greasiness or tackiness is a key feature that reveals its natural origin, as it is strongly dermo-compatible with human skin.

Thanks to its specific properties, Triolein Glyceryl Dioleate provides a multi-benefits action to finished formulas: good compatibility with both skin and formula, better resistance to oxidation as well as higher stability enhanced with quick penetration into the skin. In addition, the ingredient with its non-greasy skin-feel has a soft touch and a gliding effect.

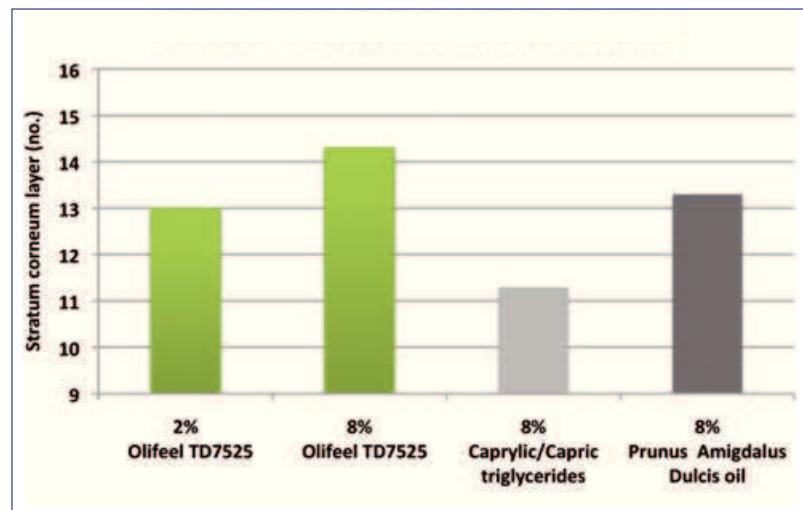


Photo 1: Skin penetration in comparison to benchmark products

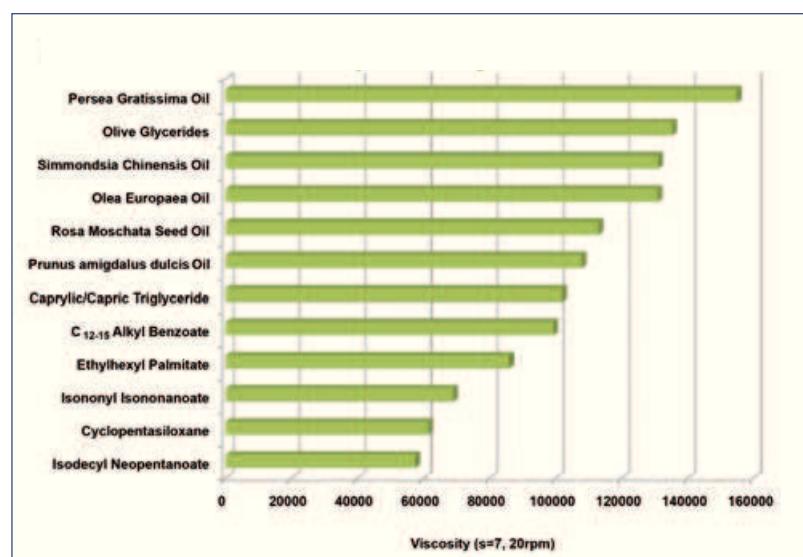


Photo 2: Compatibility with different oils

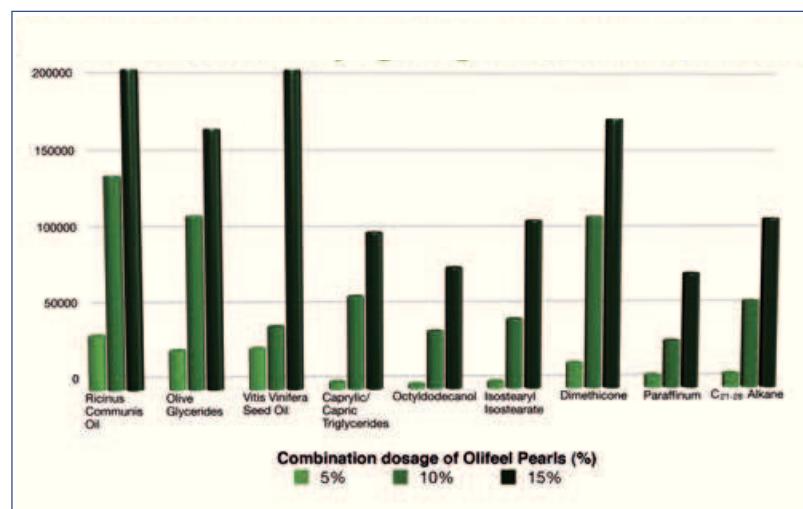


Photo 3: Gelling effect with various oils

photos: Arnadeo Brasca

The efficacy of this oil in enhancing the skin absorption of the emulsion was tested by means of the skin stripping technique. **Corneofix foil** was used on 10 female subjects (aged 18–65 years old). Results confirmed that the oil works quickly (30 min) and at low dosage. In comparison to benchmark products, the oil enhances the absorption of an emulsion by up to +26.5% in comparison to Caprylic/Capric triglycerides and up to +7.5% in comparison to almond oil, see photo 1.

Triolein Glyceryl Dioleate Oil with its light balanced film forming property brings to the finished formula a satisfying sensorial experience: a nice soft

When used in hair care formulations such as shampoos, conditioners or hair masks, it improves hair look, feel and manageability. Its emollient properties condition the hair and make it easy to comb.

#### Natural W/O emulsifier and emollient

**Olifeel E-Nat W** (Olea Europaea Fruit Oil) is a W/O emulsifier and emollient obtained from a 100% sustainable technology. It provides good performance as well as an interesting sensorial profile with a pleasant skin feel. It is the perfect choice for natural formulations as it is very compatible with

the skin from water loss and environmental stresses. It helps to create stable and efficient natural formulations and can be used as natural support for skin, body, sun and baby care. Moreover, it shows interesting cosmetic features such as pleasant skin feel as well as long-lasting and nourishing activity.

#### Natural touch and stabilising rheology modifier

**Olifeel Pearls W** ( $C_{10-18}$  Triglycerides) is a potent and versatile rheology modifier/gelling agent, able to thicken any anhydrous oily system at different percentages. In contrast to classic triglycerides it is solid, white, odourless, and shows a higher melting point as it does not melt in contact with body heat. The triglycerides are fully saturated, without double bonds. Its  $C_{16-18}$  specific fatty acids composition imparts from 5°C up to 10°C higher melting temperatures than other aliphatic  $C_{16-18}$  saturated fatty acids. In fact, their peculiar configuration enhances a precise and repeatable conformation at the molecular level and promotes molecular interactions by hydrogen bridge bonds, i.e. especially strong dipole-dipole attractions. Its unsaponifiable olive content can also help anti-oxidation and emollience for a dual “function and care” nature.

$C_{10-18}$  triglycerides are more compatible with the majority of cosmetic lipophilic ingredients, even from diverse origins (natural, mineral or synthetic). Although this performance is not exclusive, it is interesting to note that the affinity is also very good for silicones, esters and other hydrophobic substances. With mineral oils, the affinity seems to depend more on the length of the carbon chain. The longer the chain, the higher the viscosity, the better the affinity, see photo 3.

photo: www.billionphotos.com, Shutterstock.com



High-quality olive fruits from an Italian supply chain

feel, quicker penetration of the emulsion and higher comfort to the skin, which is gently smoothed. This makes it suitable for skin care, body care and also baby care applications. Due to its emolliency properties, matte aspect as well as its ability to disperse pigments, or to carry a particular lipophilic active and to act as a real booster of penetration, the oil can also be used in a wide range of make-up products.

Inserted into rinse-off products such as bath and shower gels, Triolein Glyceryl Dioleate provides a long lasting protective effect after towel drying, skin moisturisation and good skin conditioning by leaving a very light and discrete film and a pleasant and silky skin feel.

#### Downloads

Additional information can be found at [www.cossma.com/q00066](http://www.cossma.com/q00066) or you can just scan the QR code! Your access codes for December:  
User name: **cossma12**  
Password: **new**



vegetable oils, esters, UV filters and silicones. The oil creates a stable link between the water and oil phases' network (W/O) which helps to easily formulate table emulsions and provides the finished products with an interesting emollient effect and a pleasant sensorial profile. It is very versatile in terms of texture (from heavy to light texture), see photo 2. Its good film forming properties protect

Additional product information and formulations can be found on the Internet – see Internet panel

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