

## OLIVATIS 12

INCI name: POLYGLYCERYL-3 PENTAOLIVATE

**Olivatis 12** is an excellent non-ionic W/O emulsifier, resulting from the esterification of Polyglyceryl-3 with olive fatty acids. **Olivatis 12** is a "green" product, derived entirely from vegetable raw materials:

- Glycerin obtained from 'renewable' sources.
- Fatty acids extracted from olive oil.

TYPICAL PROPERTIES	
Appearance:	viscous liquid
Colour (Gardner):	amber
Acid value:	5,0 max.
Saponification value:	170 - 200
Water:	1,0 % max.

**Olivatis 12** allows the use of any type of lipids, polar or apolar, without particular final differences, and such a property is remarkable in cosmetic preparations that require:

- Formation of a structure stable at cold or warm temperatures.
- Formulating versatility.
- Facility and quickness of production.

Emulsions formulated with **Olivatis 12** are easily absorbed and, although they are rich in natural oily substances, are not greasy or sticky. W/O emulsions generally require a greater amount of mechanical stirring, compared to O/W emulsions, and the homogenisation phase is important in order to achieve an excellent final result. The consistency and the homogeneity of the lipidic phase, as well as the dispersion of the aqueous phase, depends on homogenisation.

In cosmetic emulsions, the lipidic phase is often composed of many substances, which are very different from each other both for their chemical properties and their polarity. Oils with high polarity values reveal a great solubilizing ability (they are much more similar to skin lipids than paraffin derivatives) and also reveal great functionalities. However, as they do not behave in a completely lipophilic manner, it is somewhat difficult to introduce them in stable emulsions. In fact, it is very difficult to create emulsions whose lipidic phase consist exclusively of polar oils.

It is easy to formulate W/O emulsions containing lipids with medium or low polarity, such as hydrocarbons, esters or ethers, and to achieve stable emulsions, but if the lipidic phase is completely formed of lipids with high polarity, emulsions are often unstable.

If **Olivatis 12** is used at percentages lower than 5% and lipids with high polarity are involved, the emulsion is not stable. This type of emulsions can be made stable, either increasing the emulsifier or adding stabilising agents such as rheological modifiers. On the contrary, the presence of high polarity lipids is much less of a problem in reticular systems. Furthermore, when **Olivatis 12** is used in at least 5% concentrations, a reticular structure is already formed and the viscosity of the emulsion is not much affected by the addition of consistency factors. If the concentration of the emulsifier is reduced, the presence of consistency factor becomes more important.

In order to understand how the polarity of the lipids involved might affect the stability of emulsions, we have investigated different possibilities. First of all, we have tried to include a small amount of lipids of natural origin such as esters or triglycerides, while keeping a larger amount of non-polar lipids, such as phytosqualane, in the lipidic phase. The consequent positive results are enhanced by the emulsions appearance, which is shiny and very agreeable.

**Olivatis 12** acts as W/O emulsifier, building up a liquid crystal network and has hydrating and filming properties that create very mild creams, suitable even for the most sensitive skins. In make up products, it helps the dispersion of any kind of powder, from Titanium dioxide to iron oxides, so it becomes a versatile material for make up and sun care formulations; it can also improve brilliance of color cosmetics. In fact, it is a very effective dispersant for any kind of powder, from "fillers" such as talc and kaolin, to coloured iron oxides and lakes. It acts as a brilliance enhancer in lip gloss and colour cosmetics in general, as well.

**Olivatis 12** helps to:

- Make rich, nutritive W/O creams and lotions for sensitive skin.
- Disperse homogeneously physical filters in sun products, assuring the most effective skin protection from UV.
- Keep skin protected from sun even in water (water resistance).
- Improve brilliance in make up products.