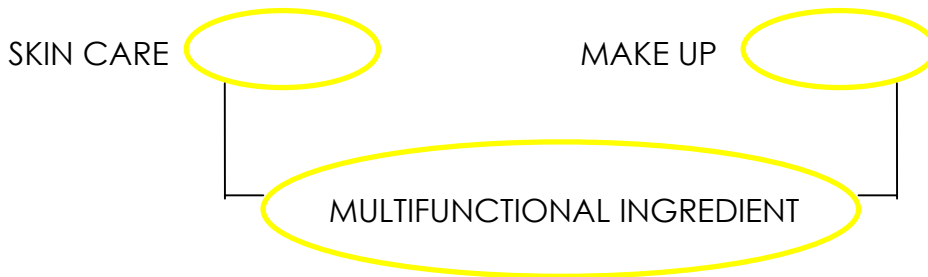


The interest of the consumers of the cosmetic market towards products that may perform at the same time a combination of make up and effective cosmetic skin treatment has now increased a lot: in fact 'Moisturising Lipstick', 'Nourishing Mascara' or 'Protective Foundation Cream SPF 12' are only some examples of what we can find on the market today. All make up products, in fact, seem to become commercially successful not just if they exhibit an increasing level of pleasantness, safety and performance, but also if beautifying is combined with skin treatment in one product. The idea that lies behind this request is that there is nothing like a make up product that remains on the skin all day long: no other cosmetic treatment owns this peculiarity, so this is the reason why safety is required, but effectiveness is much appreciated.

Besides consumers' requests, then, the formulator also requires efficacy, safety and multifunctionality for the raw materials that are employed in his formulations. Multifunctional ingredients, in fact, allow to reduce the number of substances in formula, and this lowers the risk of toxicity and sensibilization for consumers.

OLIVEM 900 is a new raw material of completely natural origin, in fact it derives from esterification between fatty acids from olive oil and sorbitane (and there is now a widespread tendency to use vegetable derivatives in the field of decorative cosmetic) and it performs an effective multifunctionality. We can split its actions into two main parts:



Olivem 900 in a cosmetic formula, in fact, performs several actions that improve the character of formulation both as a skin care treatment and as a decorative product. Olivem 900 acts as a:

- emulsifier
- polish
- powder dispersant
- gelling agent
- wetting agent

As described, Olivem 900 performs different and combined characteristics.

It helps to:

- make rich, nutritive creams (W/O emulsions) containing a high amount of lipids but with a very light touch for sensitive skin
- protect skin more effectively from Uvs with physical filters because these are more homogeneously dispersed into the formulation
- give water resistance to products because it has a HLB value of 4.7, so it acts as an emulsifier keeping water into the internal phase
- enhance brilliance in make up products such as lipsticks, mascara, eye liners
- improve any powder dispersion in formulation: from the uncolored "filler" , also known as smoothing agents, such as physical filters (titanium dioxide, zinc oxide, kaolin, silica), to colored iron pigments and lakes
- improve the wettability of the microgranules of iron oxide to mineral oil, which is usually not suitable for the homogeneous dispersion of polar pigments

OLIVEM 900 AND SKIN CARE

⇒ *Olivem 900 as EMULSIFIER*

Olivem 900 is a water/oil emulsifier of the new generation, since it belongs to a group of emulsifiers of completely natural origin. Furthermore, it works by building up a liquid crystal network that may include up to 70% of lipids without changing its nature. In this structure the lipids are also protected to oxidation induced by external agents, in fact trials have shown how in a mixture of the olive wax from which Olivem 900 derives and Sweet Almond oil, the Rancimat time of the almond oil increases at the increasing of the percentage of the wax. This happens because the oil is protected by the structure of the wax to the reactions induced by the increase of temperature.

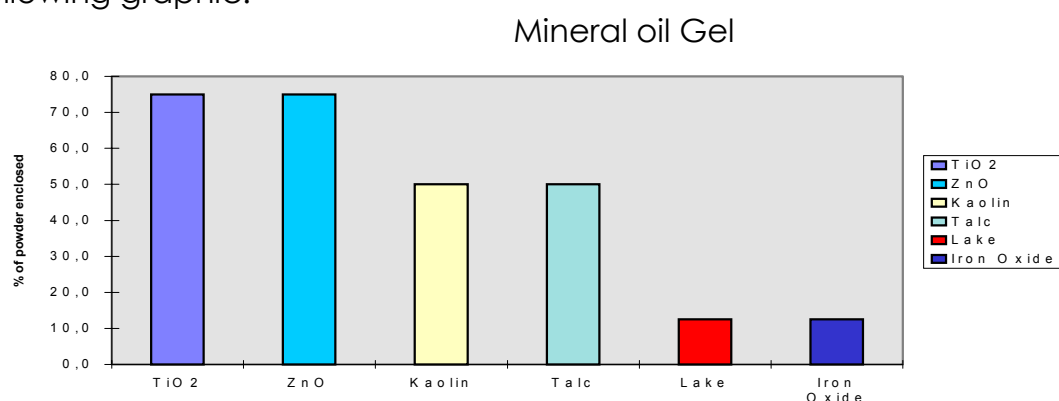
The structure of Olivem 900 has a double nature, in fact it is made by a lipophilic part, composed by the fatty acids from olive, and by a hydrophilic part, the polialcoholic group of sorbitan. This double nature gives Olivem 900 water/oil emulsifying properties: its HLB value is 4.7, use levels are 5 to 7.5%. Olivem 900 allows to formulate very rich creams with a special, light touch, even if containing a high amount of lipids.

This is certainly due to the liquid crystal network that is formed inside the emulsion. An example of how Olivem 900 can give pleasant products in simple formulations follows. A lip balm, a water in oil emulsion, is created containing a small amount of menthol, that gives a refreshing effect. Restitutive action is performed by the lipidic phase.

| LIP BALM | |
|--|------------------|
| OLIVEM 900 | 7.5 |
| PHYTOSQUALANE | 10.0 |
| JOJOBA OIL | 2.5 |
| UNSAPONIFIABLES | 2.5 |
| MgSO ₄ | 0.5 |
| MENTHOL (DISSOLVED IN PROPYLEN GLYCOL) | 1.0 |
| PROPYLEN GLYCOL | 4.0 |
| PRESERVED WATER | as needed to 100 |

⇒ *Olivem 900 as POWDER DISPERSANT*

Olivem 900, thanks to its properties due to its structure, is very helpful in making powder dispersions homogeneous. In fact it is very effective in making the microgranules of the powders being wetted by formulation, and this improves the homogeneity of the formulation. This characteristic is even more important because it is applicable to powders of any kind: talc, kaolin, zinc oxide, titanium dioxide, and even colored iron pigments and lakes. This characteristic in skin care is very important in particular for sun screens, because the homogeneous dispersion of the physical filter grants a safe protection for the skin towards the aggression of Uvs. A good look of how the dispersions are improved by Olivem 900 is given in the following graphic:



The gel created with the following formula: Olivem 900 (10%) and Mineral Oil (90%), has shown the property to enclose a very amount of any kind of powder, much more than usual values.

The test has been leaded by successive additions of powder to the gel, up to the maximum reached, that is much higher than usual quantities.

⇒ *Olivem 900 as GELLING AGENT*

Olivem 900 has a very high compliance with all lipidic phases, and in presence of any kind of oil it behaves as a gelling agent. This is a very useful property to be used in water free pomades and ointments. This characteristic has been tested in mixtures at different ratio with various lipids, and Olivem 900 resulted to perform gelling action. The gel becomes more fluid at the decreasing of Olivem 900, and this obviously happens because the amount of the fluid part increases. Olivem 900 can so give a structure to lipidic phases, and this increases their compatibility towards skin.

Mixtures have been made with Paraffinum Liquidum, Castor Oil, Octyl Dodecanol, Sesame Oil, Isopropylmyristate, Sweet Almond oil, C12-15 Alkyl Benzoate.

OLIVEM 900 AND MAKE UP

⇒ *Olivem 900 as EMULSIFIER*

Make up employs water in oil emulsions in several products, for example foundation and waterproof mascara. The reason why this kind of products is so widespread is that they can grant a long lasting effect and a strong resistance to skin secretions and even to external agents (wind, for example, that may cause excessive dryness to skin and lips, or cold as well). The idea of make up, in fact, is now turning from simple product improving the appearance of face and body to a real, effective cosmetic treatment. Make up products, in fact, are supposed to stay on the skin all day long, and it is hard to think to a more effective cosmetic treatment!

Foundations, for instance, should be able to protect and hydrate the skin throughout the day. Furthermore, foundations contain a large amount of powders, both colored and fillers, and Olivem 900, besides building a proper emulsion, also helps the dispersion of powders granting homogeneity of dispersion and color.

| CREAMY FOUNDATION | |
|----------------------|------------------|
| OLIVEM 900 | 7.50 |
| PHYTOSQUALANE | 15.00 |
| UNSAPONIFIABLES | 7.50 |
| GLYCERIN | 4.00 |
| MgSO ₄ | 0.50 |
| PRESERVED WATER | as needed to 100 |
| CI 77891 | 9.50 |
| CI 77491-77492-77499 | 1.60 |
| TALC | 2.00 |
| KAOLIN | 2.00 |

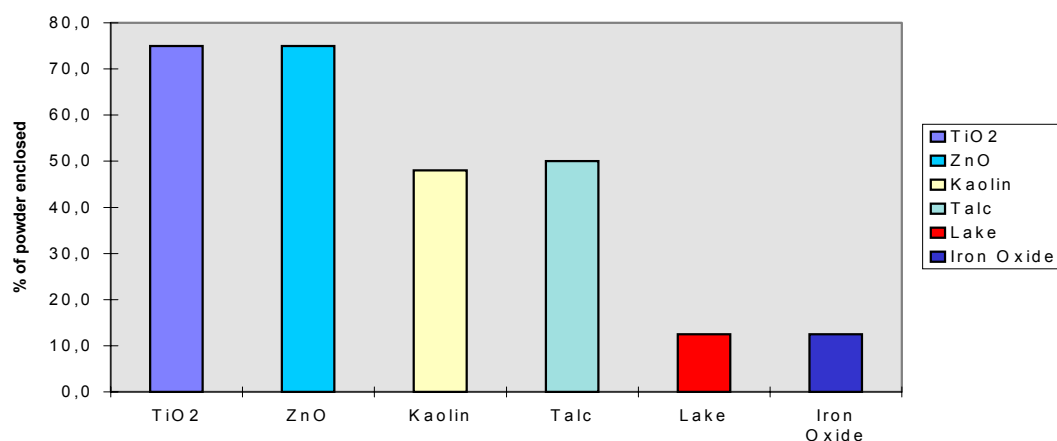
A different use for Olivem 900 is to include it in a water lipstick. Normally lipstick do not contain water, but the actual trend of the market is to improve the hydrating capacity of a lipstick and the addition of a small part of water is helpful. Thanks to the emulsifying properties of Olivem 900 it is now possible to include a certain amount of water into a lipstick paste in order to improve hydrating capacity of the product.

⇒ *Olivem 900 as POWDER DISPERSANT*

As already remarked, Olivem 900 helps the dispersion of powders in any kind of system. Colored powders are very employed in make up, and Olivem 900 not only grants proper dispersion of powders, but also color homogeneity and long lasting effect.

Trials of powder dispersions have been made using a gel containing Castor Oil, which is one of the most employed in color cosmetics, and the satisfying results are here reported:

Castor Oil Gel



The gel created with the following formula: Olivem 900 (10%) Castor Oil (90%), has shown the property to enclose a very high amount of any kind of powder. The test has been led by successive additions of powder to the gel, up to the maximum reached, that is much higher than usual quantities.

Furthermore, the standard behavior of lakes in oils resulted in brighter and glossier dispersions than with inorganic pigments. In suspensions containing Olivem 900, titanium dioxide and iron oxides gave a surprisingly glossier appearance.

⇒ *Olivem 900 as POLISH*

Olivem 900 has the property to make products more shiny, in fact it enhances the brilliance of colors. This characteristic is highly appreciated because it is strongly requested especially in lipsticks, where the glossy effect is much requested.

Olivem 900 can also improve structural characteristics of lipsticks by improving mechanical resistance of the stick, without affecting the pay off capacity and the brilliance of product.

Following an example of formulation where Olivem 900, acting as a wax, has improved the characteristics of the final product.

| LIPSTICK | |
|---------------------------------------|------------------|
| OLIVEM 900 | 3.00 |
| RICE WAX | 4.00 |
| CANDELILLA WAX | 3.50 |
| OZOKERITE | 3.50 |
| CARNAUBA | 5.50 |
| LIMNANTHES ALBA+ BUTYROSPERMUM PARKII | 5.30 |
| JOJOBA OIL | 4.50 |
| SWEET ALMOND OIL | 4.80 |
| PRUNUS ARMENIACA | 3.50 |
| CASTOR OIL | as needed to 100 |
| VITAMIN E ACETATE | 1.00 |
| ASCORBYL PALMITATE | 0.10 |
| C10-30 CHOLESTEROL/LANOSTEROL ESTERS | 13.20 |
| DIISOSTEARYL MALATE | 8.70 |
| LANOLIN OIL | 6.50 |
| LAURYL PCA | 1.00 |
| CI77492 | 2.00 |
| CI77491-77492-77499 | 2.50 |
| CI 77891 TITANIUM DIOXIDE | 4.00 |

⇒ *Olivem 900 as WETTING AGENT*

Olivem 900 reveals the interesting property to make iron oxides suitable to be wetted by paraffinum liquidum. In fact, for the special balance of absorption on the surface of powder granules, iron oxides in paraffinum liquidum in the presence of Olivem 900 become very shiny, even more brilliant and glossier than commonly used lakes. Since iron oxides and paraffinum liquidum are at the base of most color cosmetics, it is important to remark that Olivem 900 may also improve performances of other very common raw materials.

CONCLUSIONS

Olivem 900 performs a very interesting action of compliance towards skin, and this happens because of the materials from which it derives: olive oil, in fact, and the fatty acids contained it, have a very high similarity with skin lipids, and this is due to the oleic chains contained in the substance but also the fatty acids contained as well. Olivem 900 is absolutely not toxic and grants a high safety level.

Olivem 900 gives stable water in oil emulsions when employed at 5 - 7.5%, and the emulsions created have a very light touch even if they are very rich in lipids.

Olivem 900 is suitable for any kind of powder dispersion: in fact it helps the homogeneity of the formulation whether it includes colored powders for make up or "filler" powders for skin care products. Anhydrous pastes or emulsions containing Olivem 900 and powders will have an improved dispersion due to the particular structure of Olivem 900.

In the presence of mineral oxides and mineral oil, it improves the brilliance and the shining effect of pigments: this is a very interesting characteristic since it is performed in the presence of two of the most commonly employed raw materials in color cosmetics. In lipidic-based products, it can give water resistance to a wide range of products: barrier creams, for example, may be formulated as pomades containing Olivem 900. Olivem 900 in make up has shown the capacity to improve the filming capacity in mascara and lipsticks. In lipstick as well, it also improves mechanical resistance of the stick without affecting the pay-off capacity, so the color of the lipstick is long lasting and homogeneous. As we have seen, Olivem 900 is a complete multifunctional ingredient that has a high level of safety and skin compliance thanks to the natural ingredients from which it derives. Olive, in fact, is one of the most ancient cosmetics known, and modern technology allows to obtain high quality raw materials to create a modern and safer cosmetology.

The information presented in this bulletin is given in good faith and is true and accurate to the best of our knowledge. No warranty or guarantee is expressed or implied regarding the accuracy of such data. It is the user's responsibility to determine the suitability for his own use of the information presented.



OLIVEM®900

MAKE UP AND SKIN CARE

TECHNICAL DATA SHEET

PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------------|---|
| Trade Name..... | OLIVEM 900 |
| Applications..... | non ionic, not ethoxylated emulsifying system derived from olive oil for W/O creams and lotions |
| INCI Name..... | SORBITAN OLIVATE |
| CAS Number..... | 92202-01-2 |
| EINECS Number..... | 2960335 |
| Legislative Approval..... | world-wide |
| Company..... | B & T Srl - Via O. da Tresseno, 9 - 20127 MILAN - Italy Tel. 0039.02 26142044 - Fax 0039.02.26142060 |

02. SPECIFICATIONS

| | | |
|------------------------|---|------------------------|
| Form @ 20°C..... | : | flakes, waxy solid |
| Color. | : | ivory |
| Odor..... | : | slight, characteristic |
| Active Substance%..... | : | 99.0 min |
| Water Content % | : | < 1.0 |
| Acid Value..... | : | 10 - 30 |

03. SOLUBILITY

| | |
|------------------|-----------------------|
| Soluble..... | in ethanol and xilol. |
| Dispersible..... | in warm water |

04. TYPICAL VALUES

| | |
|-----------------------|----|
| | |
| ification Value..... | 90 |
| g Point..... | : |
| ves and preservatives | |

05. SHELF-LIFE

5 years stored unopened into original containers at a temperature between 5 and 35° following GMP guidelines

Revision : 1.07.2002

information contained in this bulletin to the best of our knowledge is currently true and date. Any recommendations or suggestions are made without any warranty or guarantee since conditions of use and storage are beyond your control.