



## REINOLDERM OLV9

The formation of an W/O emulsion is bound to the action of the emulsifier that must possess the capacity of decreasing the interface tension of the two phases and protecting the dispersed droplets of watery phase from the trend to get together. The characteristics and the chemical physical properties of the emulsifier depend directly from the composition of its molecule that is formed by a hydrophilic group and by a hydrophobic group. In a W/O system, the surfactant will concentrate itself at the surface of separation of the not mixing liquids, orienting the hydrosoluble portion toward the water and the liposoluble portion toward the oil. So it will cause the formation of an emulsion in which the watery phase will present itself as small droplets dispersed in the continual oily phase. To characterize the hydrophilia or the lipophilia of a substance we must consider that the affinity of a molecule to the other bases on the electrostatic attraction. We can divide the molecules and the atomic groups in polar and not polar groups. Not polar substances are characterized by an uniform distribution of the electrical charge in whole the molecule or atomic group; otherwise the polar substances show an uniform distribution of the electrical charge and they have centers full of electrons (electrical negative charge) or empty of electrons (positive charge). The preparation of stable emulsions is difficult when the external phase contains a high percentage of polar oils. This difficulty is because a lot of vegetal oils do not present a hydrophobic behavior, they can disturb the interfacial layer of the surfactant.

The **REINOLDERM OLV9** belongs to the category of the nonionic lipophilic emulsifiers, better, to the sector of the partial esters of the sorbitane with saturated and unsaturated fatty long chain acids.

This product allows the realization of emulsions of appreciable cosmetic grade, shiny and creamy, light and easily absorbed and with a smooth feel and they allow the incorporation of any type of oil, even of high polarity. The stabilizing properties doesn't resent neither of the polarity of the oily phase either of the ratio among the phases; the viscosity/temperature ratio has a linear state, perfectly reversing.

The stabilizing theory of the emulsion across the formation of reticular network of liquid crystals,

differences itself from the HLB theory or from the of the Schulman couple because it reserves a smaller importance to a co-emulsifier used as consistency factor with stabilizing action. This function is entrusted by the reticular structure. The relative hydrophilic grade of lipids used in the emulsion, that is the polarity factor (the HLB required), are less important then the presence of a reticulating system.

The gelling activity of the watery phase can be obtained with hydrosolvatables polymers or with emulsifiers that are able to form an organized reticular structure, and substitutes the employment of waxy substances and of consistency factors not more in tuning with the modern conception of the W/O emulsions, wish is preferred to be fresh and light, not impacted, smooth and easy to spread.

**REINOLDERM OLV9**, INCI name=Sorbitan Olivatate, is disposed in this modern emulsiological conception. It consents the employment of any type of lipids, apolar or polar, without particular final differences and it reveals such properties to can be used in those cosmetic preparations where are required:

- The formation of a structure stable at cold or in warm temperatures.
- A formulating versatility.
- Facility and quickness of production.

Beyond the traditional method, **REINOLDERM OLV9** consents the use of partial cold processing, adding a third of the watery phase heated to 75°/80°C to the oily phase melted at 80°C and adding the residual cold quantity of watery phase.

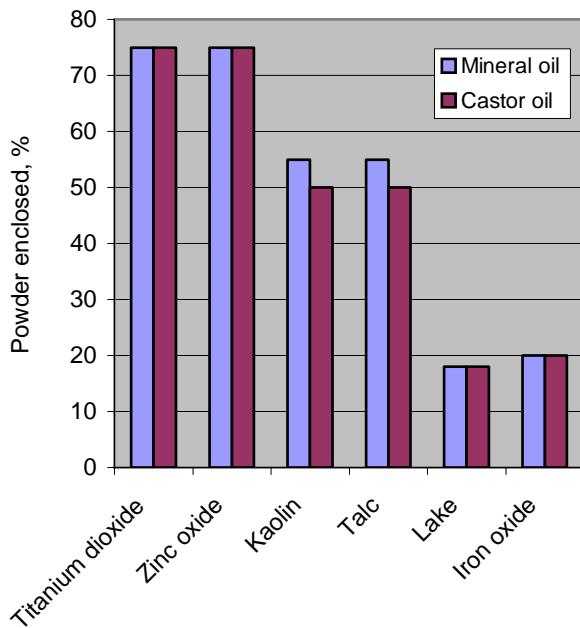
The operation must be effected slowly and with an homogenizing action, allowing formulations gifted of very good cosmetic appearance, soft, light and easily to spread, without negative properties such as greasiness, stickiness and heaviness that often have done prefer O/W systems even if less functionally efficacious.

**REINOLDERM OLV9** 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, **REINOLDERM OLV9** is a very effective dispersant for any kind of powder, from “fillers” as talc or kaolin, to colored iron oxides and lakes. It also acts as a brilliance enhancer in lip gloss and color cosmetics in general.

**REINOLDERM OLV9** has gelling properties towards a wide range of lipids. In the following graph is showed the capacity to contain powders of two gel based on mineral oil and castor oil. Results, as reported, are very satisfying since the quantity of powders enclosed is much higher than usual.

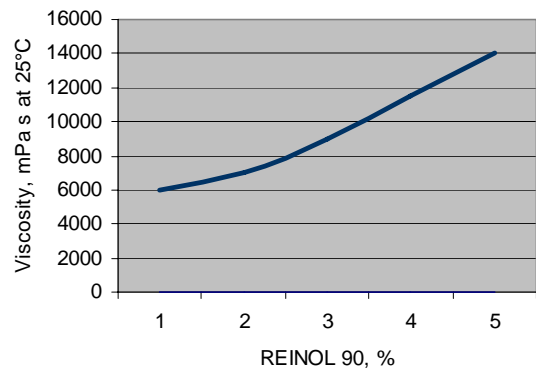


**REINOLDERM OLV9** helps to:

- 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.
- Reduce lip dryness caused by lipsticks

Increasing the percentage of employment of **REINOLDERM OLV9**, the clamminess of the emulsions increase in consequence.

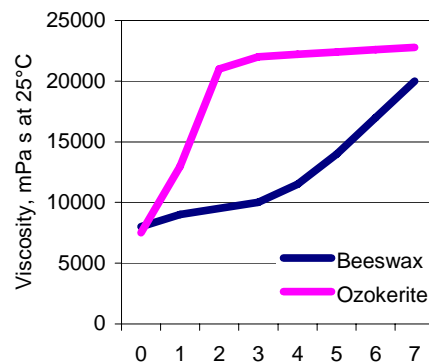
The following diagram illustrates the course of the clamminess of an emulsion containing an increasing percentage of emulsifier (from 7 to 15%) and a fixed percentage of the 10% of Triisostearin, an ester of intermediate polarity.



During the preparation of an emulsion, the viscosity increases naturally in the cooling phase. In the following diagram could be noticed that the maximum increase is obtained when the temperature comes under 40°C. If a liquid crystal system formed in the water/oil interface, the fluctuations of the components the interface is limited.

This transformation increases the emulsion stability. The incorporation of various consistence makers (to example wax of bees and ozokerite wax) in the external phase of the emulsion determines a certain increase of viscosity.

In the following diagram shows how the cream’s viscosity naturally tends to increase as it cools during manufacture.



REINOL provides technical service and maintains a constant program of research and development. Our technical service is available to work with customers in developing formulations to achieve optimal performance and economy. Sample supported with technical data sheets and safety data sheets are available on request.

To prepare finely dispersed W/O creams which will maintain their stability, powerful, high-shear emulsification equipment has to be used. The amount of emulsifier necessary to obtain W/O emulsions is always higher than for O/W emulsions. Usually 5 to 10 % is needed for creams, depending on the amount of aqueous internal phase. About 0.5 to 0.8 w/w of hydrated magnesium sulfate is necessary to achieve a practical shelf life, improving the high temperature stability. Some 2 to 5 % of polyol is often used as providing a moisturizing effect and improving stability in the cold.

**Water free baby paste**

<b>REINOLDERM OLV9</b>	4.00
Castor Oil	35.00
Zinc Oxide	55.00
Perfume and preservatives	q.s.

**Sun protection cream**

<b>REINOLDERM OLV9</b>	7.00
Shea Butter	2.00
Caprylic Capric Triglyceride	4.00
Isotridecyl stearate	7.00
Jjoba Oil	5.00
Bees Wax	3.00
Octyl Methoxycinnamate	4.50
Butyl methossidibenzoilmethan	2.00
Water	up to 100
Glycerin	2.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	0.70
Perfume and preservatives	q.s.

**Emollient baby cream**

<b>REINOLDERM OLV9</b>	6.00
Decyl Oleate	5.50
Hydrogenated Polydecene	8.00
Octyl Stearate	3.50
Triisostearin	5.00
Almond Oil	5.50
Wheat germ oil	2.00
Water	up to 100

Glycerin	2.00
Zinc Oxide	10.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	0.50
Perfume and preservatives	q.s.

**Nourishing night cream**

<b>REINOLDERM OLV9</b>	7.50
Caprylic/Capric Triglyceride	6.50
Triisostearin	3.00
Caprylic/capric Triglyceride	4.00
Phytosqualane	2.00
Bees Wax	2.50
Hydrogenated Castor Oil	1.50
Olea Europaea Oil Unsaponifiables	1.50
Bisabolol	1.00
Water	up to 100
Glycerin	2.00
Panthenol	1.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	0.70
Perfume and preservatives	q.s.

**Talc in cream**

<b>REINOLDERM OLV9</b>	5.00
Paraffinum Liquidum	30.00
Octyldodecyl Lactate	15.00
Talc	50.00
Perfume and preservatives	q.s.

**Creamy foundation**

<b>REINOLDERM OLV9</b>	7.50
Octyldodecyl Lactate	5.00
Phytosqualane	3.00
C12-15 Alkyl Benzoate	7.00
Hydrogenated Polydecene	5.00
Water	up to 100
Glycerin	3.50
CI 77891	9.00
CI 77491-77492-77499	1.50
Talc and Kaolin	4.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	0.50
Perfume and preservatives	q.s.

**Lipstik**

<b>REINOLDERM OLV9</b>	10.00
Candelilla Wax	7.50
Carnauba Wax	6.00
Ozokerite	4.50
Octyl Dodecanol	11.00
Lanolin Oil	6.00
Octyldodecyl Lactate	5.00
Isostearyl Neopentanoate	4.00

Castor Oil	up to 100
Tocopheryl Acetate	1.00
Ca Al Borosilicate	2.50
C10-30 Chol Lan Esters	6.00
Lakes and pigments	7.00
Tianium Dioxide	2.50

**Body moisturizing fluid emulsion**

<b>REINOLDERM OLV9</b>	6.00
Avocado Oil	4.00
Shea Butter	3.00
Caprylic/capric Triglyceride	3.00
Paraffinum Liquidum	2.00
Isopropyl Myristate	3.00
Bees Wax	2.00
Water	up to 100
Sorbitol 70 %	2.00
Olea Europaea (Oil)	4.00
MgSO <sub>4</sub> . 7H <sub>2</sub> O	0.50
Perfume and preservatives	q..

**REINOLDERM OLV9** capability of giving a structural network to lipids has been evaluated at high and low percentages. With different oil, it shows gelling properties, independently of the polarity of them.

**Behavior of a blend of REINOLDERM OLV9 10% and lipid 90%.**

	<b>Gel type</b>	<b>Emulsion type</b>
Mineral Oil	Soft, easy to spread	O/W
Castor Oil	Soft /glossy, moderately easy to spread	W/O
Sesame Oil	Soft, easy to spread	W/O
Almond Oil	Soft/pasty, easy to spread	W/O
Isopropyl Myristate	Pasty, easy to spread	W/O
C12-15 Alkyl Benzoate	Fluid, moderately easy to spread	W/O
Octyldodecyl Laccate	Fluid, moderately easy to spread	W/O
Triisostearin	Pasty, moderately easy to spread	W/O
Caprylic/capric Triglyceride	Pasty, moderately easy to spread	W/O

For Additional Informations Please Contact

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