



# Olivatis® 21

## Applicative guidelines

### INTRODUCTION

**Olivatis® 21** is a high effective emulsifier suitable for cold and hot process, developed to provide an easy-to-use emulsification system for milks and cream gel.

### GENERAL PROCEDURE OF USE

**Olivatis® 21** should be mixed with oils and then the resulting mixture should be added to the water phase under stirring. High shear emulsification is not mandatory but is recommended to develop a homogenous size distribution of micelles, improving stability and sensorial profile of formulations.

**Olivatis® 21** normally can be used at 1-5% concentrations, in the emulsifier:oil ratio of 1:2-1:4. Being impossible to predict the nature and polarity of oils to emulsify these ratios and concentrations can be modified according to the needs of the formulation.

**Olivatis® 21** is a cold process emulsifier, very effective at room temperature. However, if the water phase is very cold (<10 °C), it is possible a lack of effectiveness for partial crystallization of its components and, in such a case, it is recommended to heat the water phase above 10 °C. Long storage at temperature <10 °C may lead to the partial crystallization of the components, as well. This situation is completely reversible heating the product slightly and mixing it.

**Olivatis® 21** is not heat sensitive and can also be used in formulations requiring a hot process (for instance, when the incorporation of waxes is needed). In that case, it should be mixed with oils and waxes heated at the required temperature and this phase should be added to the water phase at the same temperature. We recommend maintaining the mixture under stirring until the temperature is below 40 °C.

**Olivatis® 21** is not sensitive to pH and can be used in the pH range of 3,5-10. Higher or lower pH is not recommended because it may lead to the hydrolysis of the esters.

We recommend dissolving all preservatives (e.g. phenoxyethanol) and water-soluble ingredients (e.g. glycerin, glycolic extracts, etc.) in water before emulsification.



## STABILIZATION OF EMULSIONS

The HLB of **Olivatis® 21** is 11 about, to increase the stability of emulsions it is possible to adjust the hydrophilic-lipophilic balance by adding co-emulsifiers such as Olivatis 19, sorbitan monooleate, glyceryl monooleate, or glyceryl monostearate (in the case of a hot process). In this way, it is possible to adjust the lipophilic value required for a particular oil composition.

For the long term stability of milks, it is possible to add natural gums (such as xanthan gum at 0,15-0,3%) or our **Carbomed 940 EZ** and **Carbomed 1030**.

## MANUFACTURE OF HIGH VISCOSITY EMULSIONS (CREAM GEL)

**Olivatis® 21** can be used for the manufacture of high-viscosity creams too, adding **Carbomed 940 EZ** or **Carbomed 1030** to the water phase and proceeding as described before for the cold process. Once the emulsion is formed **Carbomed** can be neutralized by sodium hydroxyde. The necessary amount of **Carbomed** ranges from 0,25% to 0,6%, depending on the required final viscosity.

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