



Olivatis®

The ultimate emulsifiers



Olivatis®, for a sustainable living

The planet's ecosystems are deteriorating and the climate is changing. We are consuming so much, and so quickly, that we are already living far beyond the earth's capacity to support us.

We shall meet the needs of the present without compromising the ability of future generations to meet theirs.

As sustainability is an integral part of Medolla Limited's vision and values, Olivatis® have been designed not only to deliver outstanding ingredients to the personal care world but also to deliver products that meet individual, social and environmental needs simultaneously. Olivatis® have been conceived with the strong commitment of creating value both inside and outside the company.

Sustainability of our Olivatis® starts with the choice of renewable, sustainable raw materials, first of all Olive Oil. Olive is a very ancient, very popular and very environmentally friendly plantation, as:

- In no way Olive plantation involves deforestation.
- Olive trees can be grown in extreme climatic conditions, where few other woody crops survive, thus resulting in a barrier to desertification and erosion.
- Olive trees do not require high amounts of water. Seventy percent of the world's olive orchards are rain fed, without water from irrigation and using only rainwater. In some regions of the Mediterranean, olive trees are grown with barely 200 mm of rain and constitute an essential source of livelihood for many sectors of the population.
- Researches have demonstrated that, when the proper agricultural practices are applied, the carbon sink effect of olive trees is much greater than the amount of CO₂ emitted to produce one product unit.

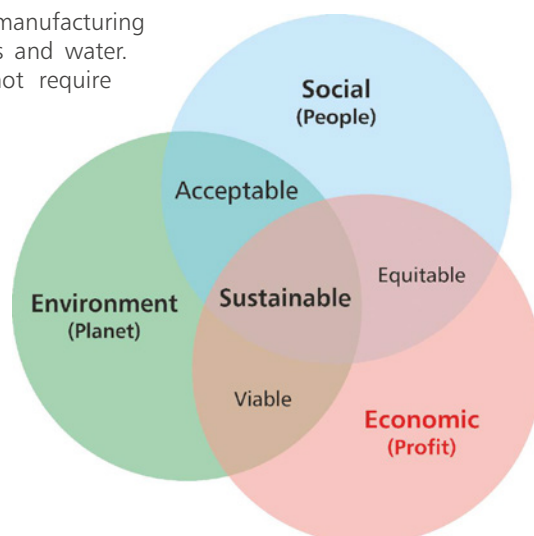
As we also are more and more concerned about deforestation, displacement of indigenous peoples and loss of biodiversity as consequences of palm oil consumption, most of Olivatis® are Palm-free (Olivatis® 12C, Olivatis® 15C, Olivatis® 19 and Olivatis® 21), while those containing palm-oil derivatives (Olivatis® 18 containing Cetearyl Alcohol and Olivatis® 20 containing Lauryl Glucoside) are RSPO Mass Balance certified.

In addition to the choice of the most sustainable raw materials, Olivatis®' manufacturing processes have been created to minimize the consumption of electricity, gas and water. Furthermore, processes do not generate wastes and emissions and do not require consumptions of water (except negligible amounts for cleaning vessels).

Chemical processes do not involve the use of toxic auxiliaries either and are carried out to minimize the potential of chemical accidents, such as releases, fires and explosions.

At last, the yield is basically 100 % of the raw materials used, net of reaction water.

For a sustainable living.





Olivatis® Overview

Produced exclusively by the **Medolla Limited** in the European Community, Olivatis® are globally compliant, sustainable, high performing ingredients resulting from the synergistic union of a high profile chemistry with Olive Oil, combining outstanding performances with the unique lubricant, restructuring and skin protective properties of olive oil.

Olive Oil is a typical non-GMO, mediterranean product of very large volumes, representing an important source of income for the agricultural fields of the south-european countries. The numerous benefits of Olive Oil have been known for thousands of years as ancient populations used it to moisturize and to rejuvenate skin. In more recent years, the composition and properties of Olive Oil have been thoroughly investigated, scientifically supporting the consolidated belief in Olive Oil as an amazing natural substance:

Olive oil, in addition to fatty acids, contains a spectrum of substances beneficial to skin, such as Vitamin A, Tocopherols and at least 36 polyphenols that promote a series of demonstrated effects once applied on skin:

Anti-Bacterial Effect

Anti-Inflammatory Effect

Antioxidant Effect

Wound Healing

Skin Aging



Furthermore, allergies to olive oil are almost unknown and people allergic to olive oil are very rare; Olive Oil and its derivatives are therefore an allergy-free option for skin treatments for people who have sensitivities to other substances.

By means of straightforward but very selective chemical processes of esterification and trans-esterification, Olive Oil and Olive Fatty Acids are bound with different molar ratios to Polyglycerine-6 and PEGs, allowing the production of a complete range of value adding functional ingredients - from a mild surfactant /water-soluble emollient, to an amazing silky feel, liquid, cold-process W/O emulsifier - suitable for any kind of applications, easy to use and with excellent skin feel and texture.

The use of very well-known and top safe intermediate materials make Olivatis® very safe ingredients, suitable even for the most delicate applications. In the case of the PEG-based ingredients - Olivatis® 15C and Olivatis® 21, Dioxane and free Ethylene Oxide are first stripped down to, respectively, 10 ppm max and 1 ppm max and further reduced to a basically undetectable level by the process of trans-esterification, thus removing any possible concern about the toxic effect of Dioxane and free Ethylene Oxide.

The range of Olivatis® currently consists of 6 products, 4 emulsifiers, 1 skin feel and texture enhancer and 1 water soluble emollient/mild surfactant, that can be classified in 2 groups:

- **Peg-Free, Natural, Cosmos approved Ingredients.**
- **Peg-based, conventional ingredients.**

Olivatis® are very well technically supported by the high-skilled, enthusiastic staff located in our R&D center in Italy who will be happy of offering customers a tailor-made assistance to remove their eventual formulating doubts and to supply them with any required information on regulatory matters. Furthermore, several guide-line formulations, showing main performances of Olivatis®, are available too.

Olivatis® are distributed worldwide by an extensive network of well-established distributors who ensure a swift availability of products and a capillary support to our customers.





Peg-Free, Natural, Cosmos Approved Olivatis® Going Green

The PEG-free, natural, Olivatis® have been designed to meet formulators' growing demand of high performing, sustainable and safe ingredients.

The last few years have seen a massive rise in the natural personal care market, fueled by consumers' rising awareness of the harmful effects of certain chemical substances and coupled with the rising availability of environmentally sustainable products.

Nowadays, cosmetic companies are oriented to develop more natural and eco-friendly formulations, in order to achieve beautiful results without sacrificing consumers' health and without ecological repercussions.

By consuming sustainable natural resources, manufacturing of natural products contributes to reduce greenhouse gas emissions and the reliance on petroleum-based resources too.

The Peg-free, natural Olivatis® are based on Olive Oil and vegetable, non-GMO, palm-free (primarily from Olive), Polyglycerine-6 and are entirely natural in accordance with the Cosmos Natural standard as well as with the recent ISO 16128 and 16128-2 standards.





Olivatis® 12C

Olive Oil Polyglyceryl-6 Esters, Polyglyceryl-6 Pentaoleate

Olivatis® 12C is a non-ionic, viscous liquid, W/O emulsifier, suitable for hot and cold manufacturing, with excellent skin feel despite its very high water resistance.

The superficial film created by Olivatis® 12C is water resistant, but is light, almost unperceivable.

Olivatis® 12C maintains a pleasant level of skin hydration and leaves skin smooth and soft. Olivatis® 12C confers to W/O emulsions those characteristics of lightness, easy spreadability, freshness, reduced greasiness and absence of tackiness, typical of W/O emulsions.

Olivatis® 12C works best with mixtures of oils and esters. Although it is a broad range emulsifier, it is recommended to use an Olivatis® 12C/oil ratio of 1:4 - 1:5. Olivatis® 12C is very versatile and forms stable, shiny, not tacky W/O emulsions, with a good spreadability.

In make up products, Olivatis® 12C is a very effective dispersant of powders, from "fillers" such as talc and kaolin, to coloured iron oxides and lakes and improve brilliance of colours in lip gloss and colour cosmetics, as well.



**COSMOS
APPROVED**

Body cream.

Easily spreadable W/O cream where Olivatis® 12C offers superb emulsifying properties and provides a silky luxurious skin feel.

| Ingredient | % w/w |
|-----------------------------------|---------------|
| Olivatis® 12C | 5.00 |
| Coco Caprylate Caprate | 5.00 |
| Dicaprylyl Ether | 5.00 |
| Cetearyl Isononanoate | 5.00 |
| Shea Butter | 3.00 |
| Jojoba Oil | 2.00 |
| Medxtract Aloe 1:2 | 0.50 |
| Medxtract Calendula 1:2 | 0.50 |
| Magnesium Sulphate (heptahydrate) | 1.00 |
| Preservative | q.s |
| Water | q.s to 100.00 |



Olivatis® 18

Olive Oil Polyglyceryl-6 Esters, Sodium Stearoyl Lactylate, Cetearyl Alcohol

Olivatis® 18 is an ivory, waxy material and is a outstanding O/W emulsifier with excellent emulsifying power, low inherent odor and color, high versatility and easiness of use and stability at a acidic and alkaline pH.

The combination of an emulsifier derived from olive oil, that is rich in fatty acids similar to those of human sebum, and of a derivative of lactic acid, an essential component of the NMF, makes Olivatis®18 a superior emulsifier with skin moisturizing and protecting properties.

Formulating with Olivatis® 18 is very easy and it is possible to achieve high sensorial characteristics, light and silky feel and excellent spreadability.

Olivatis® 18 shows remarkable emulsifying properties with a wide range of fatty substances, in a broad concentration range. Oils difficult to emulsify, such as vegetal and silicon oils, are not an issue.

The recommended concentration of use of Olivatis® 18 in emulsions is 20-40 % of the oil phase concentration, or 3-4% in milks or lotions and 4-6.5% in creams, depending on the volume and the characteristics of the components.

Olivatis® 18 is the perfect solution for skin care, sun care and colour cosmetics.



**COSMOS
APPROVED**

Natural shea butter BB cream.

This light to medium-coverage formulation shows the ease of use, the good spreadability and the rich texture of Olivatis® 18, that enhances pigment dispersion too.

| Ingredient | % w/w |
|------------------------------|-------------|
| Olivatis® 18 | 5.00 |
| Coco Caprylate Caprate | 6.00 |
| Squalane (vegetal) | 3.00 |
| Shea Butter | 2.00 |
| Caprylic Capric Triglyceride | 2.00 |
| Propanediol | 2.00 |
| Xanthan Gum | 0.20 |
| Titanium Dioxide | 3.00 |
| Pigments | q.s |
| Water | q.s to 100 |
| Preservative | q.s |
| Parfum | q.s |



Olivatis® 19

Olive Polyglyceryl-6 Esters, Phospholipids

Olivatis® 19 is a unique combination of olive oil derivatives and phospholipids. Olive oil esters restore the natural hydro lipidic film of skin while phospholipids, thanks to their skin adhesion properties, enhance the penetration of actives in skin and improve its water balance.

Therefore Olivatis® 19 acts as a feel texture and moisturizing enhancer in skin care oils, fluid emulsions and creams. Olivatis® 19 is also an excellent emulsifier for specific applications, such as bath oils, pre-shave oils, bath melts and bath butters.

At 1-2 % in toiletries, Olivatis® 19 acts as lipid layer enhancer, modulating the excessive degreasing effect of surfactants and avoiding the unpleasant sensation of skin dryness. In shampoos, the high water retention properties of Olivatis® 19 give brilliance to hair and makes it soft and easy to comb.

Olivatis® 19 does not affect foaming properties and viscosity of toiletries

In foundations, Olivatis® 19 is an effective pigments wetter, allowing an excellent dispersion of pigments.

Olivatis® 19 is the ideal ingredient for formulators who want to achieve foundations with unique skin feel and soothing properties, combined with outstanding color homogeneity.



Nourishing and protecting all day shampoo with Olivatis® 19.

This cost-effective shampoo, for everyday's use, protects and nourishes hair. Olivatis® 19 gives emolliency and provides a protective barrier to hair cuticle giving brilliance and softness.

| Ingredient | % w/w |
|-------------------------------|---------------|
| Sodium Laureth Sulphate (70%) | 10.00 |
| Cocamidopropyl Betaine (30%) | 10.00 |
| Olivatis® 19 | 1.50 |
| Arginine | 0.50 |
| Panthenol | 0.25 |
| Sodium Chloride | 0.75 |
| Preservative | q.s |
| Parfum | q.s |
| Lactic Acid | to pH 5.5-6.0 |
| Water | q.s to 100 |



Olivatis® 20

Olive Oil Polyglyceryl-6 Esters, Lauryl Glucoside

Olivatis® 20 is a selected blend of Olive Oil Polyglyceryl-6 Esters and Lauryl Glucoside and is a viscous oily liquid, with a yellow amber color.

Olivatis® 20 is a cold and hot process oil-in-water emulsifier particularly recommended for sprayable to pourable lotions.

Olivatis® 20 is ideally suitable for wet wipes emulsions.

Due to its excellent compatibility with both low and high polarity oils and electrolytes and its tolerance to pH and temperature, Olivatis® 20 is an outstanding emulsifier for troublesome emulsions too.

Rather than an emulsifier, Olivatis® 20 can be classified as a hydrophilic lipid, forming fluid O/W emulsions, very fresh and light and with a unique and pleasant velvet effect.

Olivatis® 20 is globally compliant and is approved by Cosmos as a natural ingredient.

Olivatis® 20 should be used as a cold process emulsifier at an emulsifier/oil ratio of 1:1 or 1:2; for low viscosity emulsions it is recommended to use a low amount (0,1-0,2%) of a popular stabilizer (such as xanthan gum, guar gum, etc).



Make-up remover lotion.

Developed for wet-wipes, this lotion removes make-up very effectively and, due to the hydrophilic film created by Olivatis® 20, leaves skin smooth and velvety.

| Ingredient | % w/w |
|--|-------------|
| Olivatis® 20 | 2.50 |
| Medxtract Witch Hazel Distilled | 5.00 |
| Medxtract Chamomile 1:2 | 0.20 |
| Medxtract Green Tea 1:2 | 0.20 |
| Isononyl Isononanoate | 2.50 |
| Isohexadecane | 2.50 |
| Xanthan Gum | 0.20 |
| Parfum | q.s |
| Preservative | q.s |
| Water | to 100.00 |



Peg-based, conventional ingredients

Some 80 percent of all personal care ingredients are at least in part derived from petroleum and a large part of these consists of the so-called Peg-based, ethoxylated, products, as Ethylene Oxide is utilized in their production.

Peg-based products are still widely used in the personal care and cosmetics field for their performances, skin feel, compatibility with a very broad range of raw materials and biodegradability.

However, despite their large use and continuous growth and although all scientific committees for the evaluation of personal care ingredients (SCCS and CIR) have declared them safe, the Peg-based products are constantly under the scrutiny of consumers as they may be contaminated with measurable amounts of 1,4 Dioxane and free Ethylene Oxide.

Medolla Limited has developed 2 products based on Olive Oil and Pegs, specifically

Olivatis® 15C (Olive Oil Peg-8 Esters)

and very recently

Olivatis® 21 (Olive Oil Peg-6 Esters & Olive Oil Polyglyceryl-6 Esters).

Olivatis® 15C and Olivatis® 21 are produced by means of a very selective trans-esterification process that does not involve direct ethoxylation but where the glyceric fraction of Olive Oil Triglycerides is substituted by top quality Pegs that have undergone a vacuum stripping purification process that reduces 1,4 Dioxane and free Ethylene Oxide down to, respectively, 10 ppm max and 1 ppm max.

The trans-esterification process, carried out at temperatures $>150^{\circ}\text{C}$, allows a further reduction of 1,4 Dioxane and free Ethylene Oxide basically to an undetectable level. Therefore, our Peg-based Olivatis® 15C and Olivatis® 21 undergo a double purification process that guarantees an extremely reduced content of impurities and makes it possible for customers to use products with excellent performances in terms of effectiveness and skin feel but ensuring at the same the utmost safety regarding possible traces of potentially dangerous substances.

Olivatis® 15C and Olivatis® 21 comply with the recommendations of the SCCS (Scientific Committee on Consumer Safety), Opinion on the Report of the ICCR Working Group: Considerations on Acceptable Trace Level of 1,4-Dioxane in Cosmetic Products, 15 December 2015, SCCS/1570/15.





Olivatis® 15C

Olive Oil Peg-8 Esters

Olivatis® 15C is produced by an exclusive transesterification process that allows the substitution of the glyceric fraction of olive oil with Peg-8.

This exclusive process, without direct condensation with ethylene oxide, makes olive oil easily available in water systems, maintaining the composition infatty acids and in unsaponifiable fractions.

The resulting product is a water soluble, practically odorless, clear, yellow liquid, free of impurities and suitable for use in detergents, tonics, lotions, aqueous or hydro alcoholic solutions, where the outstanding emollient and lubricant properties of olive oil are appreciated.

Thanks to its mildness, Olivatis® 15C is suitable for leave on products as well.

Olivatis® 15C for new concept toiletries

Olivatis® 15C has both superfatting and detergents properties and at 1-5% concentrations in toiletries helps reducing dryness of hair scalp and skin after use.

Olivatis® 15C is completely water-soluble, does not affect foaming, is suitable for transparent shampoos, tonics, body and facial wash, leaving products crystal clear.

Thanks to its faint color, Olivatis® 15C does not modify the color of finished products, allowing formulators to make easily all possible shades.

Cleansing gel with Olivatis® 15 - rinse off.

This pleasant cleansing gel combine the mild surfactant properties of Olivatis® 15 with the lipid layer restructuring properties of Olivatis® 19, leaving skin clean and smooth.

| ingredient | % w/w |
|---|-------------|
| Olivatis® 15C | 4.50 |
| Olivatis® 19 | 1.00 |
| Medxtract Cabbage Rose Distilled | 10.00 |
| Medxtract Witch Hazel Distilled | 5.00 |
| Carbomed 940EZ | 0.50 |
| Preservative | q.s |
| Parfum | q.s |
| Sodium Hydroxide | q.s |
| Water | to 100.00 |



Olivatis® 21

Olive Oil Peg-6 Esters, Olive Oil Polyglyceryl-6 Esters

Olivatis® 21 is a selected blend of the trans-esters of Olive Oil with Peg-6 and Polyglyceryne-6 and is an outstanding universal, non-ionic, palm-free, liquid, Oil-in-Water (O/W) emulsifier, ideally suitable for cold, low-energy and cost-saving manufacturing processes.

Olivatis® 21 is versatile, mild, robust, cost-effective, easy-to-use and highly-compatible with both low and high polarity oils, silicone oils, electrolytes, quaternary compounds, temperature and a broad pH range.

Olivatis® is the choice of excellence for sprayable and pourable lotions and creams, giving formulations an excellent touch and improving smoothness, emolliency and skin moisturization, as well.

Furthermore, in addition to its amazing emulsifying properties, Olivatis® 21 is easily soluble in a wide range of oils, that makes it possible to create water-dispersible oils without any trouble. In fact, it is sufficient to mix Olivatis® 21 and the oils to get crystal-clear, self-emulsifiable oils, such as hair oils, massage oils and make-up removers, where the extra oil can be removed simply by rinsing, enriching skin with all beneficial properties of oils but without any oily sensation.

Olivatis® 21 allows formulators to create easily:

- Highly-stable, ultra-fluid milk emulsions, even without the addition of stabilizers such as gums.
- Self-emulsifying crystal-clear oils.
- Gel-creams with the concentration of the emulsifier as low as 1%.

According to the ISO 16128 standard, Olivatis® is a natural-derived raw material whose components have the following natural origin index I (no):

Olive Oil Peg-6 Esters: 0,52
Olive Oil Polyglyceryl-6 Esters: 1,00

Ultra fluid detoxyfing milk.

This ultra-fluid, easy-to-produce, cost-effective milk has excellent moisturizing properties that restructure skin damaged by pollution.

| Ingredient | % w/w |
|--|-------------------|
| Olivatis® 21 | 5.0 |
| Caprilic Capric Trygliceride | 7.50 |
| Decyl Oleate | 7.50 |
| Medxtract Witch Hazel Distilled | 5.00 |
| Panthenol | 0.25 |
| Glycerin | 1.00 |
| Carbomed 940EZ | 0,4 |
| Parfum | q.s |
| Lactic Acid | q.s to pH 5.5-6.0 |
| Preservative | q.s |
| Water | q.s to 100 |



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