



# COLOURFUL EFFECTS

**Emulsifiers** | When it comes to makeup, lipstick, and the like, it is not only the colours and their effect that are an important selling point, but also how pleasant the application is for the consumer. Emulsifiers play an important role here. Fabio Costiniti talks about new developments and their possibilities in the field of colour cosmetics.



► **Fabio Costiniti,**  
Global Business & Technical  
Development Manager Cleaning  
and Personal Care, Italmatch  
Chemicals, Arese, Italy,  
[www.italmatch.com](http://www.italmatch.com)

**COSSMA: Emulsifiers are also needed in the field of colour cosmetics. What is the role of polyglyceryl esters here?**

**Fabio Costiniti:** Indeed, emulsifiers are used in a variety of applications, primarily in skin care products but also in colour cosmetics when make-up is developed in emulsion form such as a cream foundation. The beauty of polyglyceryl esters is that they are much

more than emulsifiers. They can be used in typical emulsions, and they allow formulators to obtain very light W/O emulsions with a dry touch. They also help to improve water resistance and to formulate long-lasting cosmetics. They provide emolliency and refatting of the skin in any composition from skin care to colour cosmetics, or even cleansing products. These ingredients are also used in anhydrous formulations in which

they provide a creamy texture and allow for better pigment dispersion for high quality cosmetics, for example, in lipsticks or cream to powder foundations.

Additionally, polyglyceryl esters contain different HLB (hydrophilic-lipophilic balance) values which makes them perfect for application, from W/O to O/W emulsions, also providing even solubilisation when needed. On top of being an emulsifier, some polyglyceryl esters<sup>1</sup> are a green solubiliser and are easy to use in cold process manufacturing.

### How sustainable and natural are polyglyceryl derivatives and what raw materials are they made from?

Specifically in our business unit, which also serves the personal care market, most raw materials used come from renewable sources.

Containing no traces of PEG (polyethylene glycol) or EO (ethylene oxide), some ester<sup>2</sup> esters are a sustainable raw material choice. Whilst being mass balance certified and Cosmos approved, the raw materials used to manufacture these ingredients are polyglycerol and fatty acids, which all derive from vegetable sources and come from a natural origin. These materials can also be green in other ways, such as replacing any PEG and EO based ingredients, such as solubilisers.

Furthermore, manufacturing materials at cold temperatures helps to reduce CO<sub>2</sub> emissions, making them a much more sustainable choice of ingredients.

### What is special about the new di-ester of pentaerythritol?

We have two different esters of pentaerythritol<sup>3</sup>. With the possibility to modulate the sensorial profile of the formulations, both materials offer a lot of flexibility to formulators, from a low, less waxy melting texture to a much higher and waxier melting texture. They are very versatile materials which have been developed as consistency factors, mainly for emulsions in skin care, but also

to contain co-emulsifier properties which can help in the stabilisation of the emulsions.

So, on top of the benefits the esters have in skin care emulsions, we found that they are also great in colour cosmetics and in the manufacturing of solid toiletries. Without a doubt, solid cleansers are very trendy products nowadays, thanks to their ability to reduce the consumption of water. They are the extreme level of concentration and are also easily packed in paper-based packaging, reducing the need for single-use plastic.

Solid products developed using pentaerythritol offer high flexibility and possibilities of personalisation compared to formulations which are developed with traditional ingredients.

### What are the advantages of their use in colour cosmetics such as makeup?

We found that the pentaerythritol has a multifunctional use in colour cosmetics. It can be used as a consistency factor when developing an emulsion, for example. Although this is the most traditional benefit, the advantages extend beyond this however. They have great dispersion properties for pigments and lakes for example, as well as for titanium dioxide; this is perfect to optimise formulations and get the best from the technologies that the formulator is using.



Emulsifiers in BB creams ensure that the product spreads well and that the pigments are evenly distributed.

Another great benefit is the sensorial modification which we have seen when the ingredients are applied to colour cosmetics. Within these applications, they improve spreadability, adhesion, coverage, and many other attributes, and can also be used in lipsticks, mascaras, lip gloss, BB creams and foundations. They play a pivotal role in formulating creams to powder foundations which are easy to apply with their silky finish and very resistant structure. □

#### References:

- 1 Dapracare PG4C MB
- 2 Dapracare PG
- 3 Dapracare PEDS and Dapracare PETS

Fabio Costiniti spoke at in-cosmetics Global where Italmatch exhibited from 5<sup>th</sup> - 7<sup>th</sup> April in Paris, France.

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Produktionsgesellschaft  
für kosmetische  
Erzeugnisse mbH

Raiffeisenstraße 2  
86692 Münster am Lech  
Tel. 49 8276 584 90-0  
info@systemkosmetik.de  
[www.systemkosmetik.de](http://www.systemkosmetik.de)

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