

Formulating Naturally

Authors: Ella Ceraulo, Jennifer Hermitage, Cornelius Group Plc, Bishops Stortford, Hertfordshire, United Kingdom

Abstract

Even through economic downturn the natural cosmetic sector has remained strong. It is a sector seeing much growth and expansion with ranges developing more into a daily ritual rather than as stand alone products.

Psychologically we are geared to believe that natural is always the best option. This is probably due to our associations with food - we know that fruit is good for us, therefore fruit extracts with their essential vitamins are good for our hair and skin. This is of course true but marketing stories often lead us to believe that something is more natural than it really is. We have all seen adverts for a cosmetic where the advertised product is placed in beautiful natural surroundings and we are told how this product contains some beneficial natural ingredient. The inference is that this is a natural product. Whilst it does contain one or more natural materials to fit with the marketing story, in most cases it will have it/these at a low percentage, whilst the bulk of the product is comprised of synthetics.

How Natural is Natural?

The definitions of Natural are "existing in or derived from nature; not made or caused by humankind" or "Having had a minimum of processing or preservative treatment: natural food"⁽¹⁾. A raw material may be of natural origin but it can be manipulated into something quite different through chemical process which leads us to question 'How do we define natural?'

If we take the case of a natural oil, we can look at how this could be modified (or not) for different uses. We can use an oil pretty much in its natural state or refine it through neutralisation, deodorisation or bleaching. And straight away a valuable raw material has been produced. For example, sweet almond oil has nourishing properties and is naturally high in Omega-6 fatty acids. It can be used for direct application or incorporated into hair and skin care products for its moisturising benefits and is particularly beneficial to dry skin. Alternatively, by using complex technology, sweet almond proteins can be purified and engineered by the patented process of biopolymerisation to optimise their firming

properties thus creating a tensor active of the monomeric proteins. The polymer of sweet almond proteins forms a three-dimensional protein network which adsorbs to the skin's surface to create a lifting elastic film which smoothes microrelief. This gives two very different functionalities from one natural source.

Using transesterification, natural based esters can be designed with different functionality from a natural material containing triglycerides such as coconut palm. The chemical process of hydrolysis splits the fatty acids from the glycerine backbone leaving these building blocks free to create triglycerides. By condensation with the chosen fatty acid methyl esters a chemical with the desired characteristics can be created. This type of chemical engineering is accepted by natural standards globally such as COSMOS, NATRUE, OASIS, Ecocert, BDIH and Soil Association. The resultant products are considered natural assuming the starting materials are from a natural source^(2,3,4,5,6). These standards also allow for Saponification, Glucosidation, Sulphation, Acylation and Etherication.

Organics and Naturals

Naturals and organics are closely linked. For something to be organic it has to have been produced without the use of chemical fertilizers, pesticides or other artificial chemicals⁽¹⁾. Retailers of organic cosmetics largely appeal to their consumers because of this more eco-friendly approach and also through the powerful argument that organic products are better for our health. There is a whole debate around the organic/health topic but this is not the purpose of this article.

The fact is that the definition of a 'natural' or 'organic' cosmetic is very fuzzy indeed and unfortunately, unlike organic food, there are no legal standards for organic beauty products⁽⁷⁾. As it stands, there is nothing illegal about a company putting their own organic label on a retailed product even if the product only contains a very low percentage of organic material.

Organic Standards Agencies exist to create rules about what is an acceptable standard for an organically stamped