

Green cosmetic labels (ecolabels), an overview on the most influential ones

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ABSTRACT

Consumers desire for natural and organic cosmetics is growing, however there are a lot of grey areas in relation to green cosmetics claims and consumers do not have the skills to distinguish what is really natural and what is not. Ecolabels can provide a third party verification for green claims inspiring a higher level of trust in certified cosmetics. Given the increasing number of ecolabels available, in this article I shall review what I consider the most relevant ones, Cosmos, Natrue and the ISO 16128, looking at the key differences and feasibility formulations wise.

The global market for natural and organic cosmetics is worth 10.2 billion USD and growing by about 5-6% per year (source Ecovia Market Intelligence). Additionally and proportionately, as consumers have a growing desire and demand for natural and green beauty products, so grows their confusion due to unregulated green claims and branding. Claims such as "parabens free" accompanied by a list of natural key ingredients and a "natural look" often translates into natural and environmentally friendly in the consumers' minds.

Yet, most consumers are not equipped to understand the complexity behind cosmetic ingredients, and therefore the common choices available to them are limited to; using online resources, making their own beauty products, or going for a certified cosmetic.

Some may say there are too many certifications; however, certifications do provide a third party verification about the green claim behind a product, something valuable in a market where consumers are at the mercy of the greenwash tricksters.

ECOLABELS PROTECT CONSUMERS FROM GREENWASH, BUT THEY ALL DIFFER HOW TO GO ABOUT NATURAL AND ORGANIC COSMETICS

All natural cosmetic standards are linked to ethical and green values, they all believe in "the natural way" but they have different ways of understanding it and translating it in technical terms. In this article I shall look into what I believe to be the most relevant voluntary systems in the world of green cosmetics today: Cosmos, Natrue and the ISO standard 16128.

All of the three standards acknowledge the same general classification of natural ingredients types:

- Natural ingredients. These are plant based materials that have undergone physical processes without chemical modification - under Cosmos classification they are called PPAs, *physically processed agro ingredients*)

- Natural derivatives. These are plant materials that have gone through chemical synthesis and, as a result of this, they have changed their original molecular structure. These molecules do not exist in nature and may be blended with petrochemical parts. Under Cosmos classification they are called CPAs, under ISO "derived natural ingredients")
- Petrochemicals or synthetics

It is within the natural derivatives category where the big divide is among ecolabels as they allow different types of chemical modifications.

THE COSMOS STANDARD, GREEN COSMETICS DEFINED BY CERTIFICATION BODIES

Cosmos standard 1 was born out of a coalition of **five** major certification bodies in Europe: BDIH, Ecocert, ICEA, Soil Association, Cosmebio. The aim was to harmonise their original standards to create a unified and coherent system.

It took several years to develop the standard and to find a sweet spot of balance among the founding members. This led to the establishment of two standards: **Cosmos Natural** and **Cosmos Organic**.

The general criteria behind both are based on sustainability and the respect for animals, biodiversity, promoting organic agriculture and green chemistry. The standards go beyond the ingredients INCI names and looks into the supply chain behind them. It has a list of permitted processes for natural ingredients (PPAs), natural derivatives (CPAs), and also for mineral ingredients.

Some of the processes allowed are: alkylation, amidation, biotechnology, carbonization etc.

It also sets criteria for the natural derivatives in terms of *biodegradability*, *aquatic toxicity* and *yield*, to minimize environmental impact.

With regard to the delivery of performance, the standard allows the use of natural derivatives with petrochemical components (the so called PeMo or SyMo) *provided that* they meet the requirements listed above and that their content is capped to 2% of the total product (ie 2% max total PeMo or SyMo). The list of permitted CPAs with PeMo is quite short, but this allows increased performance in some applications (for example CAMPB and cationics).

These key criteria allow a wide selection of Cosmos approved ingredients, from vegetable oils, waxes, herbal extracts/actives and essential oils to emulsifiers, surfactants,

preservatives (some of preservatives are the classic nature identical sodium benzoate and potassium sorbate, called NNIs, non natural ingredients by Cosmos), a few cationics, mineral pigments and even sun filters.

At present there are nearly 11,000 Cosmos certified/approved ingredients (ref 2) and they are all listed in a data base with their PPAI/CPAI/NNI/SyMo contents and certification body. Non approved ingredients that meet the Cosmos standard requirements (Cosmos compliant) may be used providing a questionnaire is provided and pass evaluation.

Overall, the standard allows the development of all sorts of skincare products including suncare, colour cosmetics, and rinse off products – there are some limitations on hair products due to limited number of cationics available.

At present the number of certified products is nearly 9000, most of which are under the Cosmos Organic system.

Cosmos Organic differs from Cosmos Natural in that it has a few additional requirements, such as:

- a minimum organic content in the total product (10% for rinse off, mineral based products and water based non emulsified products, 20% for leave on)
- 95% of the PPAIs (natural ingredients) must be organic (ref 3)
- compulsory organic ingredients, for example if olive oil is used it must be organic, even if the requirement of minimum organic content is met).
- absolutes are not allowed, unlike with Cosmos Natural.
- the organic weight percentage of the total product needs to be declared as "x% organic of total".

NATRUE, GREEN COSMETICS DEFINED BY GERMAN BEAUTY BRANDS

Natru (ref 4) was founded by historic German brands, such as Weleda and Dr Hautschka, when they run out of patience while waiting for Cosmos to be finalised. They decided it was time to act and so launched their own standard or criteria.

The Natru standard sets a clear distinction between food and cosmetics, explaining that cosmetics are complex, and require chemically modified ingredients for performance. Within that, it also defines a framework that allow only ingredients close to natural substances, therefore no petrochemicals or petrochemical components are allowed in Natru products.

The only exception is *nature identical* substances for cosmetic preservation (like sodium benzoate and potassium sorbate, see Annex 4a for a complete list).

In addition, as with Cosmos, it is against GMO and GMM, but because Natru is very keen on preventing greenwash, it has the unique requirement of requesting at least 75% of the brand range to be certified under a Natru certification mark. This prevents brands from misleading consumers with just one or two certified products.

Natru has also its own list of permitted processes, such as acylation, amidation, dehydrogenation etc. Reconstitution is allowed, but the added water cannot be counted as organic or natural, on the contrary of Cosmos.

Because Natru is keen on insuring a certain level of natural content in products, it requires a minimum naturals content, and a maximum natural derived content, for the three levels of certification available:

- natural cosmetics (level 1 certification)
- natural cosmetics with organic portion (level 2 certification)
- organic cosmetics (level 3 certification)

The three levels of certification have formulation requirements found in a complex table, giving different contents requirements for 15 different products categories.

In order to find out if your formula is compliant for one of the 3 levels of certifications, you need to select the relevant product category and then do some calculations to compare them to the table requirements.

In the case of the level 2 and 3 certifications, there is also an additional formula requirement for the organic content. These calculations do not translate into a total organic content as with Cosmos, making it pretty tricky to compare the organic content between Cosmos Organic and Natru organic without knowing the formula.

In terms of ingredients, Natru has two positive lists:

- an approved list of ingredients (at present there are about 2800 approved ingredients)
- an annex with approved INCI that need to be verified in relation to the standard requirements.

There are plenty of emulsifiers available for use, some surfactants (biodegradable according to the EC Regulation on detergents 648/2004), mineral sun filters, and plenty of natural fragrant ingredients as it follows the ISO definition 9235 but no cationics. Therefore skincare and suncare are possible, perfumes also, whereas haircare, having no cationics, is hard.

At present there are over 6000 products that are Natru certified, the majority with the first level of certification, i.e. natural cosmetics. No information is provided regarding the certification body/bodies certifying the products.

ISO 16128, PRACTICAL TOOL THAT MAY PROMOTE GREENWASH

The ISO 16128 standard (ref 5) - even though it is called standard it is more a guideline requiring no certification - was created so as to make it really simple to define and calculate categories such as, natural, natural origin, organic, organic origin content from the ingredients in a beauty product. It does exactly this and from that point of view, it is a great tool. However, it may be used to express on the packaging of "natural origin" content or "organic origin" ingredients content, without any particular requirements.

Given its extreme simplicity, using one criteria only (plant origin, organic plant origin) to define natural and organic ingredients because it has no environmental criteria which the consumers care about. If a process or ingredient is legal to use, it is permitted by the standard.

For example, GMO (referring to GMO crop as well as derivative), GMM, animal testing, biodegradability or aquatic toxicity, are no concern to the ISO standard.

In Europe GMO food must be declared on the label in order to give people a choice, however when it comes to cosmetic ingredients there is no such legal requirement. Some European countries such as France and Italy, have banned GMO crops in food, but that does not prevent GMO cosmetic ingredients from entering into a cosmetic product making the cosmetic industry and consumers blind to GMO and denying them a conscious choice.

The ISO standard agrees with Cosmos and Natrue in relation to the natural ingredients or PPAs, either natural or organic, but the big divide is with the derived natural ingredients (natural derivatives or CPAIs), as it poses *no restrictions* on processes and ingredients origin. Natural origin ingredients are simply defined on the basis of their origin, i.e. molecules with over 50% natural origin molecular weight.

As minerals are classified as natural or natural origin too, silicones can contribute to the natural origin count of the total product depending on the Siliconium (or Silicon element) content in the molecule (ie it needs to be over 50% of the total Molecular Weight).

Petrochemicals are excluded from the natural definition and there is no classification for *nature identical* substances, they follow under the petrochemical category, which are also called non natural ingredients.

At present the ISO guidelines are used as a tool to express percentages given in the ISO 16128, without quoting it as such, also because it has little awareness amongst consumers. For example, a product that contained silicones, PEGs and petrochemicals claimed to have a

“natural origin” ingredients content of 97% using the ISO 16128 definition ie “naturally derived which we define to be those for which more than 50% of the molecule comes from a plant, non-petroleum mineral, water or some other natural source”. Such a product could not be certified under any of green labels voluntary schemes.

If unaware consumers trust such claim because they want environmentally friendly products, could the ISO 16128 standard be used as a tool to mislead consumers?

FINDING THE SWEET SPOT

Because of the lack of *legal definition* for natural, ecolabels can help consumers choose environmentally friendly beauty products in line with their beliefs and values. Ecolabels can also increase brands' credibility by showing true commitment and trustworthiness in a market place, where the demand for natural and organic is growing, as well as fact that confusion is on a constant rise. Choosing the most suitable ecolabel for the product or brand is very much an act of finding the sweet spot between consumer's values, the product's performance and cost. The ISO 16128 standard is a practical tool, providing nice and easy numbers that we can all relate to. However, like any tool, it needs to be used with wisdom, not as a tool to mislead consumers, otherwise it may backfire on the long term, compromising consumers trust even more and pushing them further towards ecolabels or God knows what.

REFERENCES

1. <https://cosmos-standard.org/>
2. <https://cosmosstandard.files.wordpress.com/2018/11/cosmos-in-numbers-oct-18.pdf>
3. this rule has been adapted for perfumes and soaps, see the standard 3.0 for details
4. <http://www.natrue.org/>
5. <https://www.iso.org/standard/62503.html>. ■

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