

Contents matter – evaluation of cosmetics

published in Beauty Forum 2018 (11), 34-36

Short-, long-term- and adverse effects of cosmetics are at close quarters. Product characteristics are rather complex and even experts sometimes are baffled. That is why more and more evaluations of cosmetic products and their ingredients are found in respective internet portals. How these data are generated and how reliable are they?

Reading the product descriptions of manufacturers, you would think that there are only cosmetic products with select ingredients and exceptional effects. In other words, there is not much information and no adequate answer to the question whether the specific product is appropriate for the individual case.

INCI-Codes...

Where can we get information on the substances contained in order to draw conclusions on the tolerability, efficacy and environmental features of cosmetic products? Source of information on the ingredients of cosmetics is the INCI coding (International Nomenclature of Cosmetic Ingredients) which is applicable throughout Europe. Manufacturers are legally obliged to list all the ingredients in EU-compliant denominations and descending concentration on the packaging. Concentrations of less than 1% can be listed in line with the manufacturers' requirements. Allergenic fragrance components that already are subsumed under the term „perfume“, are once more listed with their individual terms at the end of the INCI list. The 1% margin; however, is rather difficult to reckon in the case of comprehensive INCI lists. Accordingly, it also is difficult to predict the efficacy of the different active agents. Extracts with their wide variety of single components also are hard to rate. Synthetic compound terms as for instance “Dimethicone” are ambiguous too. The term can imply short-chained or long-chained silicones with completely different features. A considerable level of experience is required to detect specific features in certain combinations of terms, in other words, to find out whether the formulation has penetration enhancing features and hence only requires low active agent concentrations for high efficacy. A simple rule of thumb says that the probability for intolerance reactions increases with the number of ingredients contained, particularly in extracts.

...require profound knowledge

In other words, a rough guess on the formulations can be made however, a firm evaluation of product quality is impossible. It is one of the curiosities of the INCI system that it was originally intended as a tool for consumers who finally understand it the least, though. Even medical doctors and chemists are demanded too much of inside knowledge. While preservatives and pigments still are known, they are completely baffled with the vast number of cosmetic additives. Comprehensive expert knowledge or additional sources of information are required in order to recognize emulsifiers, consistency agents and complexing agents, and pin down their biodegradability and physiological tolerance.

It should be added that INCI information on the manufacturers' websites is rather scarce or even missing at all. Consumers often cannot find the respective information until they go to the stores and read the packaging. Consumer advice in stores also is limited since the sales staff is not really acquainted with product composition and limited to remarks like using the product successfully themselves. What can be done then when there is no trusted person around who can provide reliable information?

More information in media

Several web media today provide information on cosmetics and also publish reports on experiences with the products. Private and commercial blogs are among them, also social media and last but not least the TV home shopping channels. Since manufacturers successfully use these channels as advertising media, sponsor the bloggers with their products and every now and then find a slot for manipulated customer ratings at mail-order companies, this type of media is not an objective source of information.

Comparison portals for cosmetics

Comparison portals use this confusing situation and provide product evaluations after entering product name, INCI, bar code or a single INCI denomination. At a first glance, the portals seem to be a practical, informative and objective guidance; however a glimpse behind the scenes often gives a completely different picture. There are various reasons though:

- For the average citizen, the portals' evaluations of ingredients have to be short and precise. This of course involves simplification on the expense of information. It can go as far as annotating the product with differently coloured smileys or a (segmented) traffic light symbol which differentiates between "good" (green), "bad" (red) or "doubtful" (yellow) – possibly with short remarks concerning the devaluation. This way of proceeding involves mistakes. To quote an example: A product is devaluated because it contains "Caprylic/Capric Triglycerides" that can originate from palm oil. It is masked in this context that the component also can be gained from coconut oil.
- LOHAS (Lifestyle Of Health And Sustainability), vegetarians and vegans, Jewish- or Muslim-oriented people, persons suffering from an allergy and persons suffering from skin diseases expect detailed information. Comparison portals cannot provide this kind of information since they lack details on production and provenance of the components (criteria: animal or herbal origin, halal, kosher etc.). Only manufacturers can provide detailed answers which then also have to be trusted.
- Frequently controversial ingredients such as aluminium, palm oil, formaldehyde donors, parabens, microplastics, alcohol, mineral oils (paraffins), silicones and nanoparticles are the reason behind the devaluation, even if the available studies are contradictory or if the concentrations, which, by the way, are an essential issue, are unknown. The evaluations are based on categories like "contained" or "not contained", exclude any grey areas in between and hence are likely to follow the mainstream of public opinion.

Database design

Some comparison portals set up their product database by having consumers enter product

names and compositions and by trusting that manufacturers will correct the entries. This is a cost-saving method which, however, involves a multitude of mistakes because of unprofessional (multiple) entries, missing corrections, updates and adjustments of entries after changes of compositions. Core business of comparison portals actually are advertisements for alternative products popping up besides search mask or search results.

Comparison portals can also be financed by membership fees. Without paying their fees the readers have no access to detailed evaluations. Together with the maintenance of the product database by members, this way of proceeding is a sure-fire success.

The various motivations of comparison portals range from non-profit consumer protection for their own purpose via ecology, conservation of nature, advertisement sales by affiliated public relation agencies, to the lobbying of cosmetic manufacturer associations. In this context the advertising-financed and manufacturer-sponsored business models are dominant. If the focus is on objective information, it is advisable to search the site notice for the partners of the portal, their business relation network as well as the location of the portal, often abroad, before using the information. The own interests of site maintainers often are reflected in the quality of information.

Digital routines

Comparison portals usually obtain substance data from external databases whereas the site maintainers only very rarely disclose these database addresses. Up-to-dateness of evaluations hence depends on the organisation of the linked substance databases. Thus it is entirely possible that a component of the product is not evaluated because it is not contained in the substance database or because EU, for instance, changed the code of an extract or a substance and the entry has not been updated. This can lead to disparities when comparing different portals.

Since the portals work with digital routines, the staff behind the portals usually cannot answer subject-specific questions. Their task consists of maintaining the technical processes and correcting failures. Some of the portals do not accept and answer mails and questions on their sites.

Only a smattering of science

Due to the different content of information, there is not only competition among the different comparison portals but also criticism and dispute in public. "Mean tricks", "fakes", "randomly compiled list of criteria", "missing scien-

tific background“ as well as enforcement letters and legal means belong to the vocabulary – easy to find, by the way, when entering the name of the portal as a keyword and adding terms such as “criticism”, “misleading”, “legitimate” into the search engines. Worth remarking in this context are the contrary evaluations of the very same comparison portal by daily newspapers and specialist journals.

A broad spectrum of opinions on cosmetic ingredients can also be found in the form of cosmetic self-help books. Persons who seek advice are recommended to look out for second and third sources of information...

Non-partisan databases

...and in case of doubt concerning the properties of single components, it is advisable to look for information in the freely accessible scientific databases of EU, German Federal Government and other non-partisan institutions:

- https://ec.europa.eu/growth/sectors/cosmetics/cosing_de
- https://ec.europa.eu/health/scientific_committees/consumer_safety/opinions_en
- http://www.bfr.bund.de/de/gesundheitsliche_bewertung_von_kosmetischen_mitteln-242.html
- <https://echa.europa.eu/de/information-on-chemicals>
- <https://www.cir-safety.org/ingredients>
- <http://www.cosmeticsinfo.org>
- <https://toxnet.nlm.nih.gov>
- <http://www.ifraorg.org/en-us/standards>
- <http://www.efsa.europa.eu/de>
- <https://www.ewg.org/skindeep>
- <https://pflanzen.fnr.de/industriepflanzen/arzneipflanzen/pflanzen>
- <https://www.awl.ch/heilpflanzen>

Seals & certificates

In addition to this, it has to be mentioned that interested consumers should not blindly rely on quality seals and certificates:

- Seals concerning animal tests only serve for advertising purposes and the profits of organisations and companies involved. According to the European Cosmetic Directive, animal tests are banned in the EU member states. Also imported goods are subject to this regulation.
- Natural cosmetics and eco-products often are certified as such even if a certain percentage of the product is not of natural origin (partly multi-level certification). On top of this, “natural”

and “eco” do not mean that tolerance already is inherent in the product and that the components are compatible with the physiology of the skin.

- Organisations in which cosmetic manufacturers can become members have their own rules regarding the substances used and the compositions and then award seals for the compliance with the rules. Consumers should check whether the objectives comply with their requirements.

The profiteers of quality seals and certificates are, above all, the awarding institutions and the advertising manufacturers, hardly ever the paying consumers.

Conclusion

Comparison portal-, quality seal- and E-Book Apps are convenient tools – there is no question about that. Those who place importance in unfiltered and non-partisan information on cosmetic products and their ingredients are recommended to spare neither trouble nor expense in acquiring and extending their knowledge and then evaluating on their own instead of passing the job onto others. “He who knows nothing must believe anything” is a symptom of our times but not a good alternative though.

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