



NO MICROPLASTICS, JUST WAVES.

Fact sheet on microplastics in cosmetic products
Within the framework of the "Blue Lakes" project





Fact sheet on microplastics in cosmetic products

The Life Blue Lakes Project

Plastic is omnipresent. Without plastics, our modern life and work would not be possible. But the light, hygienic and unbreakable material, which can be moulded into any shape and has found its way into all areas of life, also shows disadvantages, for example the huge plastic rubbish carpets that float on our oceans. Another problem becomes apparent under the microscope: **microplastics**. Scientists have already detected microplastics in water, soil, air and even in our food. But what health consequences the tiny particles have on humans and nature has not yet been sufficiently researched.

Therefore, the Lake Constance Foundation and the Global Nature Fund, in cooperation with the Italian nature conservation organisation Legambiente and five other partners, have launched the EU Life project "Blue Lakes" on the topic of microplastics in water bodies. In five lake regions in Italy and Germany (Garda, Trasimeno, Bracciano, Lake Constance and Chiemsee), measures on this topic are being implemented in an exemplary manner with the aim of improving decision-making processes and regulatory framework conditions with regard to microplastics. In the project regions, the involvement of the riparian communities plays an important role. Together, a Lake Paper is to be developed that shows numerous potentials on how plastic consumption and microplastics can be reduced in the communities. The project will also look at the technological side of sewage treatment plants in order to filter out microplastics more efficiently.





The issue of microplastics has received a lot of attention in recent years. Road and tyre abrasion, fibre fragments from synthetic textiles and plastic particles from cosmetics and cleaning products play a central role in the formation of microplastics. With the Life Blue Lakes project, we want to make a contribution to finding solutions for minimising and avoiding microplastic pollution together with companies.

Further information on the project: <https://lifebluelakes.eu/en/>

Initial situation

The cosmetics and personal care industry uses synthetic polymers (plastics) in a variety of products. Synthetic polymers serve, among other things, as exfoliating particles, binders, film formers and fillers in shower gels, shampoos, creams and decorative cosmetics. Depending on the article, the plastic content can vary from less than 1% to more than 90%. These particles are referred to as microplastics, although there is no uniform definition of this worldwide. In general, microplastics are solid, insoluble, particulate and non-degradable synthetic polymers that are smaller than 5 mm³. Nanomaterials are referred to from a size of less than 1000 nm. In contrast to synthetic polymers in general, a declaration obligation then applies to cosmetics. The ingredients, such as polypropylene, polyacrylate or nylon-12, must be indicated on the packaging. However, consumers are usually unaware that these are microplastics.

A distinction is generally made between primary microplastics, i.e. extra ingredients produced by industry, and secondary microplastics, which are formed when larger plastic parts such as plastic bottles, plastic bags or other plastic products break down. Microplastics from cosmetics (primary microplastics) remain in waters and oceans for hundreds of years because they are hardly degradable. However, microplastics are also found in sewage sludge, which is often used in agriculture as fertiliser and ends up in water bodies through leaching. The main entry routes are sewage and rainwater.





This also increasingly affects lakes, whose runoff often enters the sea through rivers. In lakes and rivers, microplastics accumulate in fish. At present, however, it is mainly the microplastics in the sea that are a public issue and not the problem of the lakes, which is just as dramatic. In the sea, microplastics accumulate mainly via the food chain through plankton, mussels and worms in fish and marine mammals. Through the consumption of fish from lakes and seas, it also reaches humans, with long-term negative health consequences. (Source 1).

Possible solutions to replace microplastics in cosmetics

First of all, consumers can be sure that they are not using microplastics if they buy "certified natural cosmetics". So what alternatives are there for the industry not to use microplastics and polymers in conventional products? Classic substitutes are, for example, bio-waxes, i.e. vegetable waxes or beeswax. Microplastics can be replaced by certain clays or silica minerals. Furthermore, nut shells can be dried and ground. Many manufacturers of natural cosmetics also use sugar surfactants, silicic acid, linseed and healing earth from glacial loess deposits in their scrubs. (Source 2). Well-known cosmetics manufacturers stated that the effect and results are positive. (Source 3). Alternatively, consumers can also make their own peelings from sugar, honey and salt.

The question arises why manufacturers only partially use natural substances. According to the cosmetics industry, plastics (especially synthetic polymers) are cheap to produce and can be given special properties needed for the products during synthesis. If demand were to change and legislation were to point in a corresponding direction, there would be more alternatives. Industry concerns are the quality standards and whether the desired properties are met in the cosmetic products. With certain ingredients, such as nutshells, it could also be a problem that they trigger allergies.





In Germany, two institutes of the Fraunhofer Institute are working on microplastics in cosmetics and alternatives to them. One is the Institute for Environmental, Safety and Energy Technology (UMSICHT) in Oberhausen and the Institute for Microstructure of Materials and Systems (IMWS) in Halle. The Fraunhofer Institute UMSICHT has published a comprehensive study on microplastics in cosmetics as well as detergents and cleaning agents (Source 4). The IMWS is working together with companies on this as part of the KostLigCel research project. (Source 5)





Political and legal requirements on microplastics in cosmetics - an overview

In Sweden and the UK, microplastics in cosmetics have been banned by law, which is exemplary for Europe. (Source 6). In Germany, the Industrial Association for Personal Hygiene and Detergents (IKW) represents the cosmetics manufacturers. According to a voluntary commitment, microplastics are to be removed from cosmetics. The industry representatives promised to implement this agreement by 2016. Unfortunately, as is often the case with voluntary commitments, this only worked in part. Although much has been done in the industry in recent years, according to the BUND shopping guide for cosmetics and personal care products, many products still contain microplastics.

The European Chemicals Agency (ECHA) is planning to restrict the use of microplastics from 2022, according to a report by the German Federal Environment Agency (UBA) on 5 March 2019. The EU Commission has commissioned the European Chemicals Agency to investigate the diversity of microplastics and their increasing release into the environment and the resulting consequences. The restriction would gradually ban specific product groups containing microplastics over a period of 6 years from the date of entry into force. It is assumed that about 400,000 tonnes of microplastics could be avoided in this way over 20 years. However, it is unclearly defined whether some microplastics can still be used legally. The Risk Assessment Committee (RAC) and Socio-Economic Analysis Committee (SEAC) will now review ECHA's submission. (Source 7)

The result of this examination will then also be included in the German position on this proposal. On 18 January 2017, the Green Party submitted a request (printed matter 18/10875) in the German Bundestag to ban microplastics in cosmetics and detergents. The request calls for the following measures:





- Present a bill to immediately ban microplastics from cosmetics, personal care products, cleaning products and detergents.
- Advocate at European level for the extension of the Ecodesign Directive work programme beyond energy efficiency to include the prevention of microplastic release.
- Consider the inclusion of microplastics in the Waste Water Ordinance as a prerequisite for meeting the requirements of the Water Framework Directive and the Marine Strategy Framework Directive. (Source 8)

On 15 March 2019, the German Bundesrat passed a resolution on the restriction of microplastic discharges and the ban of microplastics in cosmetics (printed matter 22/19). In the resolution, the Bundesrat calls on the German Federal Government to initiate a legal ban involving the EU institutions if the cosmetics industry is still using microplastics by 2020 (as part of the voluntary commitment). It is implied in the March 2019 decision that it is not believed that the cosmetics industry will comply with its voluntary commitment and therefore legal measures will probably be indispensable. However, the German government could ban microplastics in cosmetics even without the EU (see Sweden). (Source 9)





Current status in the cosmetics industry

In general, it can be stated that the large cosmetics manufacturers do not sufficiently comply with the voluntary commitment to no longer use microplastics. Exceptions are smaller specialised companies such as the natural cosmetics manufacturer "Annemarie Börlind" from the Black Forest "Feel the Black Forest", the manufacturer of medical toothpastes Dr. Liebe or the company SEBAMED. These companies also actively advertise that they do not use microplastics and provide information about the problem. One can certainly conclude that this is also a competitive advantage that is used accordingly. The big companies also use less microplastics, but there are still a lot of products that contain microplastics. In its shopping guide on microplastics in cosmetics, the German environmental organisation BUND lists on 35 pages which products still contain microplastics (as of August 2019) (source 10). Through various consumer apps, the customer can also check precisely in the shop whether or not a product contains microplastics or also other substances that are harmful to health or the environment. The German website of the "Consumer Window Hessen" provides an overview of various apps on its homepage (source 11). The impact on the purchasing behaviour of customers is continuously increasing. BUND also runs a campaign against microplastics in cosmetics, feels out the big companies and exerts pressure so that the voluntary commitment of the cosmetics industry makes further progress. Numerous other associations and initiatives are also conducting campaigns to avoid and reduce microplastics.





ANNEX

Status of individual companies in the cosmetics industry on the reduction and still use of microplastics in cosmetics

Here is a list of some important companies that still use microplastics in cosmetics (see list of BUND Meeresschutzbüro) (source 12). Excerpts from the sustainability reports of individual companies on the subject of microplastics:

Beiersdorf

In its Sustainability Report, Beiersdorf commits to the claim "Skin care without microplastics". It goes on to say: "Avoiding microplastics is a high priority at Beiersdorf. It is our declared goal to consistently avoid microplastics in all product formulas and to rely on environmentally friendly alternatives." Beiersdorf focuses on "biodegradable ingredients" and in 2015, for example, replaced all exfoliating particles made of polyethylene with biodegradable particles. In shampoos and shower gels, "biodegradable opacifiers" are to be used since 2019. Nevertheless, according to the BUND Shopping Guide, Beiersdorf currently still has 81 products in its range that contain synthetic polymers.

Body Shop

Body Shop has a sustainable image and is committed, for example, against animal testing, for the preservation of the tropical rainforest or supports people in developing countries through a so-called "Community Trade Programme". However, Body Shop does not see itself as a natural cosmetics manufacturer.





The last sustainability report was published in 2017 under the title "Enrich Not Exploit". The report states that the company only wants to use natural raw materials for cosmetics production. However, there is no mention of microplastics in the report - apart from the improved recycling of packaging. The BUND shopping guide points to 26 products that still contain synthetic polymers (two of them also polyethylene).

Colgate Palmolive

Colgate's promise in 2014 was: "The Colgate Palmolive Group has already made the move. We understand the concern and have therefore already decided in 2012 to no longer use microplastics and to find alternative ingredients for our products as soon as possible." According to the BUND Shopping Guide, there are no longer any solid, insoluble microplastic particles in Colgate Palmolive products. However, 13 products still contain other synthetic polymers.

Johnson & Johnson

Johnson & Johnson's position on microplastics in its products is as follows: "At the Johnson & Johnson Family of Consumer Companies, we are phasing out and will eliminate the use of polyethylene microbeads in our personal care products by the end of 2017. We have stopped developing new products containing polyethylene microbeads and have been conducting environmental safety assessments of other alternatives. (...) Our goal is to complete the first phase of reformulations by the end of 2015, which represents about half our products sold that contain microbeads." For example, the brand "Penaten" belongs to Johnson & Johnson. According to BUND, there are no known Johnson & Johnson products with microbeads made of polyethylene. However, there are 23 products with other synthetic polymers.





L'Oréal

L'Oréal's position on microplastics is as follows: "L'Oréal is strongly committed to improve its environmental impact and has decided to no longer use microbeads of polyethylene in its scrubs by 2017. (...) The phasing out will be first achieved for Biotherm (2014) and The Body Shop (2015) before being extended to all the Group's portfolio in 2017." However, there are still 99 L'Oréal products that contain synthetic polymers, 26 of them polyethylene. So there is still some improvement to be made here.

Protcer and Gamble

Protcer and Gamble has announced that all products will be free of microplastic particles from 2017. P&G branded products are widely available. These include Oil of Olaz, blend-a-med and Herbal Essences. However, BUND is aware of 23 P&G products that contain synthetic polymers, 15 of which are polyethylene.

Unilever

Unilever says it "has not used solid microplastics in its products since early 2015." In the meantime, Unilever uses alternative ingredients such as walnut shells or silica ". However, it states, "Plastics can be found in cosmetic products in different forms. Once as solid plastic beads, so-called particulate microplastics, and as liquid or dissolved plastics. The latter, however, have completely different physical and chemical properties. Unilever has not used microplastics in solid form in its products worldwide since 2015." BUND has detected 45 products with synthetic polymers and 2 with polyethylene at Unilever.





Yves Rocher

Yves Rocher sells itself as the number 1 natural cosmetics company in the world. The BUND's demand to do without microplastics in the products was ignored at first. Through the protest of customers, 20,000 signatures were collected against this. As a result, Yves Rocher no longer uses polyethylene. According to BUND, however, 7 products still contain synthetic polymers.

dm

In its sustainability report, the dm drugstore chain refers to microplastics as a "complex issue". dm points out: "In 2014, dm already removed plastic microparticles from its own products and we have put together a great selection of microplastic-free products for you". However, BUND is aware of 7 of its own products that contain polyethylene. In addition, 58 of dm's own products contain synthetic polymers. In this context, dm says "according to current research, water-soluble synthetic polymers have not been detected in water bodies. They are said not to pass through sewage treatment plants. They do not exhibit the resistance of plastic microparticles." However, it adds self-critically that even water-soluble synthetic polymers are not always readily biodegradable. dm is looking into replacing synthetic polymers with other better degradable raw materials "as far as possible, taking into account the safety and quality of our products." It is guaranteed that 800 products - including the certified natural cosmetics from alverde - contain neither microplastics nor synthetic polymers and that this is stated in each case.

Müller

The drugstore chain Müller has a label for its own brands that says "formulation without microplastics". This way, the customer can easily recognise that it is a





product without microplastics. This includes, for example, the own brands TERRA NATUR and NATURE', which are also "Natue" certified. Work is being done with some manufacturers to stop using synthetic polymers in other products in the future and to research alternatives.

Rossmann

The drugstore chain Rossmann has developed its own seal for microplastics and indicates the "formulation WITHOUT microplastics" on the packaging. However, Rossmann admits that synthetic polymers are still used in some cases and says: "Rossmann has set itself the task of replacing these formula components as far as this is technologically possible. The various uses of liquid microplastics in particular also explain why it takes considerable effort to find substitutes and change formulations. BUND is not aware of any products that still contain polyethylene. However, a total of 8 products were found that contain synthetic polymers.

Overall, microplastics are largely considered a problem in the world's oceans (source 13) and the problem in lakes has not yet been sufficiently considered. There is, however, a study by the Bavarian State Office for the Environment in cooperation with the University of Bayreuth on microplastics in Bavarian lakes. (Source 14) The accumulation of microplastics in fish and marine mammals such as seals in the North Sea or monk seals in the Mediterranean is a good way to mobilise the public. However, the same applies to the consumption of fish from lakes.



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