

The BTMB campaign demands restriction of all intentionally added microplastics under REACH

Microplastics (synthetic polymers) are currently exempted from standard REACH procedures, which means that they are not ‘Registered’ or ‘Evaluated’ before they enter the European market. Consequently, there is very limited information on synthetic polymers within the REACH regulation. Groups of synthetic polymers that fall under the definition of ‘intentionally added microplastics’ in [the restriction proposal by ECHA](#) (2019) may become subject to authorisation and restriction under REACH.



Environmental and health risks

There is an abundance of scientific evidence regarding the potential risk that microplastics pose to the environment and to human health. Especially the chemical properties of a synthetic polymer compared to its monomer in regard to biodegradability and persistency is alarming. Long polymer molecular chains are far less biodegradable than monomers. Amongst the most daunting effects are:

- Plastic nanoparticles reduce survival of aquatic zooplankton and penetrate the blood-to-brain barrier in fish and cause behavioural disorders.¹
- Plastic microbeads hinder the growth of floating aquatic plants such as the floating freshwater plant duckweed *Lemna minor*.²
- Microplastics are ingested by freshwater and marine species.³
- Microplastics bioaccumulate in animals across the aquatic food chain and end up in the seafood on our plate.⁴
- Microplastic pollution represents an emerging global change as well as a growing threat to terrestrial ecosystems.⁵
- Microplastics persist for hundreds of years in marine and freshwater environments and are a threat to human health.⁶

Lack of information

There is limited or no information on the behaviour of microplastics in the environment. Producers are supposed to maintain safety sheets for every ingredient they use in their products. Required information on the environmental effects of an ingredient, synthetic polymers in particular, is often unclear or completely lacking. For example, a high concentration of synthetic polymers such as polyethylene-glycol (PEG) and acrylates co-polymers with variations of chains are widely found in cosmetics. In the Beat the Microbead (BTMB) database, many products were found to contain some variation of these synthetic polymers. The ingredient safety sheet of these substances do not provide any information on their behaviour in the environment.

Alternative: Look for the Zero

Additionally, natural alternatives for these substances are widely available; the restriction of microplastics would enhance the market for alternatives. The Plastic Soup Foundation provides the ‘Look for the Zero’ certification as part of the Beat the Microbead campaign. The ingredients of every product sold under a “Zero” brand are checked for microplastics. Companies that embrace the Zero make the statement that their personal care products are completely free of microplastics. There are currently more than 65 brands from around the world that are certified

under our 'Zero Plastic Inside' certification. Indisputably, this provides ample evidence that microplastics are not an indispensable ingredient for cosmetic products and that there is *no need* for long transition periods as proposed in ECHA's restriction proposal. Our experience is that a transition period of 1 year is feasible for changing formulas.

Our position

The BTMB coalition considers the proposal by ECHA to restrict intentionally added microplastics as a big step forward in controlling the microplastic menace. The European Commission should consider adapting the advice provided by ECHA. Persistency, bioaccumulation and toxicity should be vital criteria in restricting synthetic polymers. **All** intentionally added microplastics should be registered and evaluated under REACH, regardless of their external dimension, water solubility, lower size limit, their function in leave-on and rinse-off products. The extensive BTMB database shows that many cosmetic products contain so called "liquid microplastic" ingredients that are also very persistent and not easily biodegradable. Therefore, the restriction *should not* exempt liquid microplastics and *should not* adapt a lower size limit of 1 nanometer.

The general exemption of **all synthetic polymers** under REACH should be lifted. This implies that all synthetic polymers should be registered as chemical substances, regardless of what products they are added to, so that they can be evaluated. If any synthetic polymer is shown to pose a potential risk to the environment or human health, it should not be authorised but restricted.

Notes

¹ K. Mattsson et al., Brain damage and behaviour disorders in fish induced by plastic nanoparticles delivered through the food chain, www.nature.com/scientificreports 13 September 2017.

T.S. Galloway et al., 'Interactions of microplastic debris throughout the marine ecosystem', in: *Nature Ecology & Evolution*, 1, article number 0116 (2017).

² G. Kalčíková et al., 'Impact of polyethylene microbeads on the floating freshwater plant duckweed *Lemna minor*', in *Environmental Pollution* 230 (November 2017), pp. 1108-1115.

³ M.S. Savoca et al., 'Odours from marine plastic debris induce food search behaviours in a forage fish', in: *Proceedings of the Royal Society B*, 16 August 2017.

⁴ K. Tanaka & H. Takada, 'Microplastic fragments and microbeads in digestive tracts of planktivorous fish from urban coastal waters' in *Scientific Reports* 6, Article number 34351, 30 September 2016.

⁵ A.A. de Souza Machado, et al. 'Microplastics as an emerging threat to terrestrial ecosystems', in: *Global Change Biology*, 2017.

⁶ F. Gallo et al. 'Marine litter plastics and microplastics and their toxic chemicals components: the need for urgent preventive measures', in: *Environmental Sciences Europe*, 30 (2018). Published 18 April 2018