



MICROPLASTICS

A LOOK AT THE FACTS

Textiles are part of the solution



Gesamtverband der deutschen
Textil- und Modeindustrie e. V.



Verband der Südwestdeutschen
Textil- und Bekleidungsindustrie e.V.



Verband der Bayerischen Textil- und
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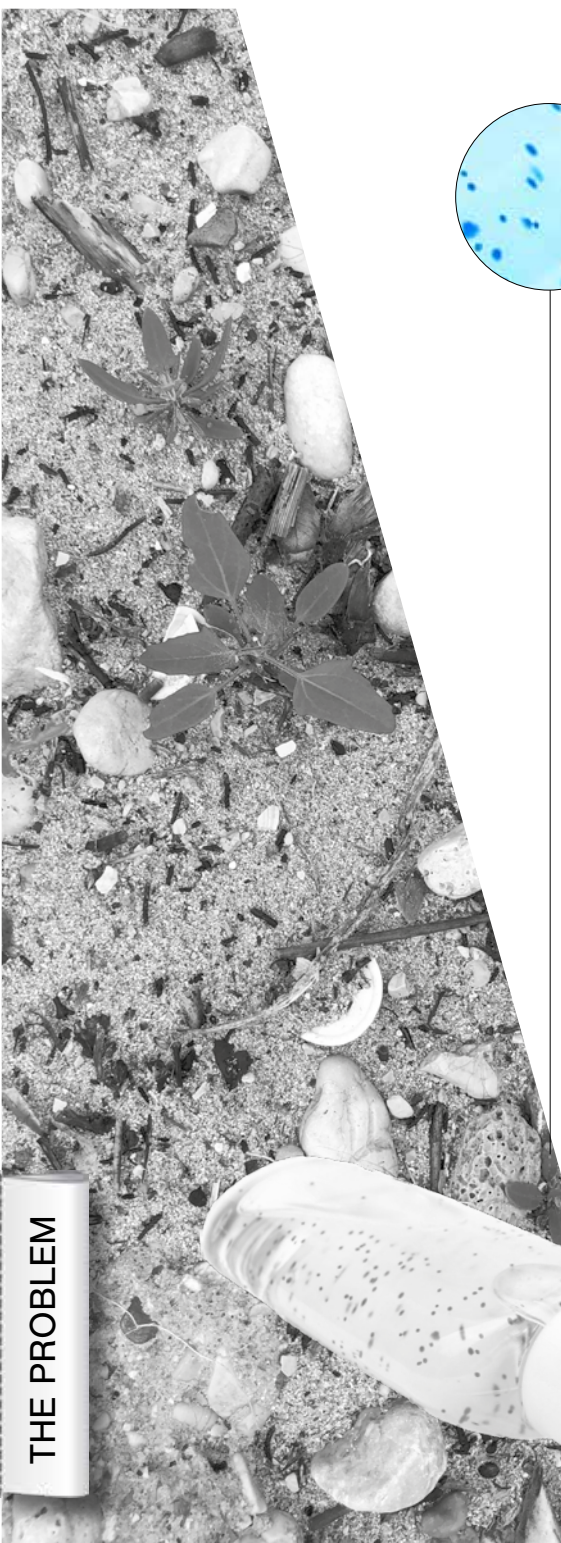


Microplastics in the environment – a contentious issue

Tiny microplastic additives in cosmetics and the washing of synthetic textiles have been identified as the primary sources. It's time to look at the facts, **for there are many errors** in the public debate – and many things are not as the European Chemicals Agency ECHA has **described**.

Photo: Where do micro- and macroplastics in our environment come from?





THE PROBLEM

The EU has no political influence on the up to 12.7 million tonnes of macro plastics (according to a 2010 estimate) that are flushed into our oceans every year, primarily through rivers in Asia, Africa and other parts of the world. Microplastics in shower gels and cosmetics are already to a large extent voluntarily avoided in the EU today.

Macroplastics are the root of the problem in our oceans

The problem of microplastics in our seas and oceans is actually a macroplastics problem, and it is one that nobody can fail to recognise. It is both visible and tangible, consisting primarily of macroplastics such as plastic bottles, plastic boxes, polystyrene etc. – things that everyone can see. Also immediately apparent is the confusion of terms relating to microplastics, for scientists also distinguish between primary and secondary microplastics. This unnecessarily complicates the issue for the layman. To put it simply, any pieces of plastic less than 5 mm in diameter can be termed microplastics.

So let us approach the problem logically and in order of priorities. According to a 2010 estimate, up to 12.7 million tonnes of macroplastics are flushed into our oceans every year. The German Federal Environment Agency (UBA) calculates that as much as 94 percent of this amount comes from just ten rivers in Asia and Africa.

Objectively speaking, therefore, the macroplastics problem is a waste disposal problem and can be put down to a lack of environmental awareness. Whilst in our part of the world we coordinate waste prevention, organised waste disposal, a landfill ban, multiple-use systems, waste separation and recycling to solve the plastic pollution problem to the greatest possible extent, waste disposal systems of this kind are completely unknown in other parts of the world.

In many countries of the world, where no waste disposal systems are in place, people wait for the monsoon to flood through rivers and streams and thus make room for new plastic waste. This may be a drastic portrayal, but it nevertheless reflects the reality. Bottles, plastic foil etc. continue to be flushed into the ocean, forming extensive vortices of plastic waste and harming marine animals. The problem is compounded by a further kind of macroplastics: “ghost” nets lost or abandoned at sea by fishing fleets. Unless this major problem is quickly resolved, the situation will become increasingly aggravated because the densely populated regions of the world will continue to discard ever greater quantities of plastic waste. No additional EU law, such as the new EU single use plastics directive, will make any difference to this, and neither will an EU tax on plastics.

Instead, what the EU ought to do is to enlighten, persuade, provide development aid with respect to environmental issues and/or provide funding and technology for waste disposal and recycling in Asian and African countries. At the same time, the EU needs to become more active in certain EU countries that still permit uncontrolled waste dumping or that have no landfill ban for domestic waste. It is time to be proactive! Environmental and waste management technology from Germany, the global leader, is a key factor in achieving this.

Source: <https://www.wwf.de/themenprojekte/meere-kuesten/plastik/unsere-ozeane-versinken-in-plastikmuell/plastikmuell-im-meer-die-wichtigsten-antworten...>





THE TIME FACTOR

The huge quantities of microplastics gradually develop from plastic waste that is channelled into our oceans.

The “time tunnel”: the time factor converts macro- into microplastics

We know that, over time, atmospheric influences and mechanical wear and tear cause macroplastics to break down into microplastics or to age at varying degrees of rapidity. The estimated up to 12.7 million tonnes of macroplastics that are flushed into our oceans every year gradually degrade into microplastics and thus constitute the largest proportion of microplastics. All other sources are far less significant by comparison.

This means that unless we solve the problem of macroplastics, we will not be able to solve the problem of microplastics. It can only be accomplished on a global scale – but the problem can be solved with the aid of the waste disposal systems and environmental technologies described above, and if everyone changes their habits.

Microplastics in the narrower sense is an infinitely complex topic, because synthetically manufactured polymers can be found in more or less all areas of life, not always in the form of “plastic”. We do not yet know nearly enough about their behaviour in the environment or in our own bodies.

We need far more scientifically verified data in order to avoid drawing wrong conclusions – because not everything is „bad“ automatically.

One synthetic, water soluble polymer about which we do know more as regards its behaviour in our bodies is polyvinyl pyrrolidone, which can also be used as a substitute for blood serum.

Photo: Macroplastics change into microplastics over time



Fraunhofer Institute and UBA confirm: Textiles negligible as source of microplastics

The latest study by the Fraunhofer UMSICHT institut joint research platform shows how vast and unstructured/substructured the topic of microplastics really is. However, the secondary microplastic emissions in Germany that it describes are of an infinitely lesser order than the overall global emission of macroplastics.

This scientific study brings to light some very different sources of plastic emission and immission in Germany from those which have been at the focus of public debate.

On the Fraunhofer UMSICHT study's list of the top 10 microplastics polluters, 1st place is occupied by the abrasion of all vehicle tyres, 2nd place by the emissions from waste disposal and 3rd place by the abrasion of polymers and bitumen in asphalt which can travel through the drainage system into streams, rivers and lakes.

The abrasion of fibres from textile washing is not listed until 10th place, far behind pellet loss in the plastics industry (4th place), particle drift from sports facilities and playgrounds (5th place), emissions from building sites (6th place), abrasion of shoe soles (7th place), plastic packaging (8th place) and road markings (9th place). On page 10 of the Fraunhofer UMSICHT report, the following statement can be found: "It becomes evident that cosmetics and textile washing, so frequently highlighted as sources of pollution by the media, are by no means the most significant on our list.

The German Federal Environment Agency (UBA) agrees with this assessment. Textiles moreover have the advantage that, in our country, microplastics immission in the environment can be drastically reduced or even prevented completely through the purification process of a wastewater treatment plant.

Textiles are, on the contrary, part of the solution to prevent immissions into the environment from other sources.



Sources of smaller quantities of microplastics and macroplastics in Germany: the Fraunhofer UMSICHT institut joint research platform sheds the first ever scientific light in the darkness of a discussion that has up to now been conducted with the wrong priorities.

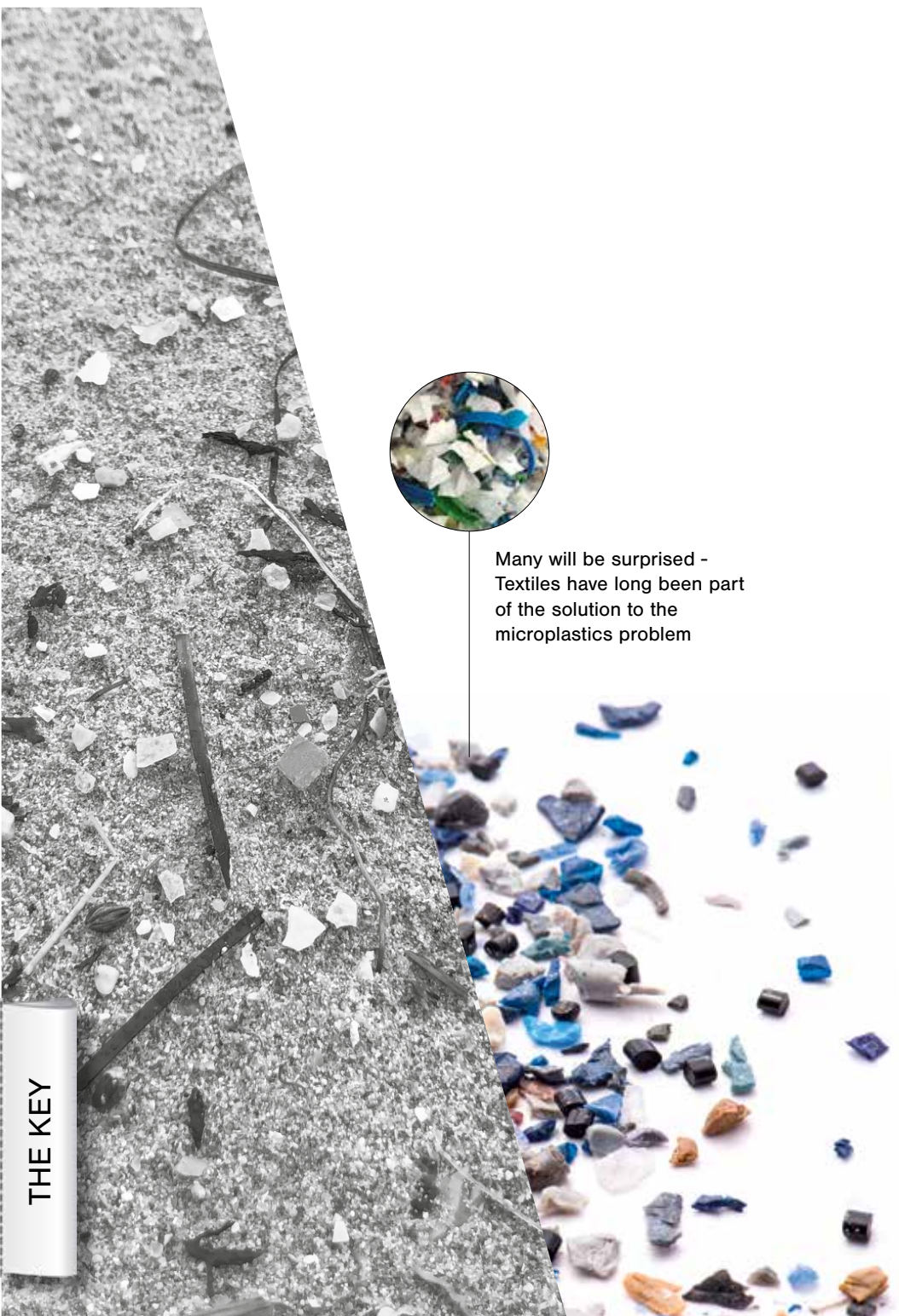


Material	Quantity (tonnes per annum)
Personal care products	500
Detergents	50 - 100
Textile abrasion (before wastewater treatment)	80 - 400
Pellet loss	21.000 - 210.000
Tyre abrasion	60.000 - 110.000

Photo: Table of secondary microplastics emissions in Germany, UBA estimate

Source: <https://www.forum-waschen.de>
Link: see QR code, PDF on page 8





Many will be surprised -
Textiles have long been part
of the solution to the
microplastics problem

THE KEY

Research into textile microplastics filtration is a key to the problem

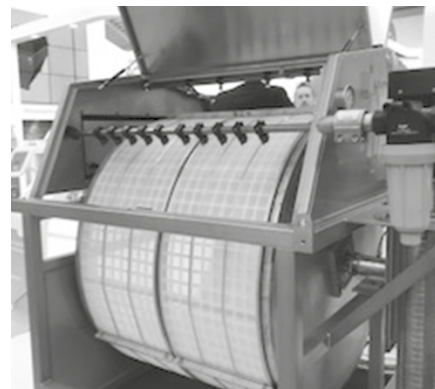
Textile experts familiar with modern environmental technology will know that nothing is usually possible without textiles. Filtration is just one example. Because of their diversity and their properties, textiles are predestined for use in this field. Many German textile manufacturers are technological and global market leaders, and German environmental technology using textiles is helping to solve the problems worldwide.

Textile filtration systems that can filter out microplastics of all kinds have been in operation in German wastewater treatment plants for a long time – and their development is ongoing.



The Swiss Federal Laboratories for Materials Testing and Research (EMPA), in their own study of microplastics, likewise confirm that state-of-the-art wastewater treatment technology is key to resolving this issue (see QR code for the link).

Photo: Textile filtration system from Veolia



The German textile industry leads the global market in textile wastewater filtration, exhaust air filtration, the prevention of soil erosion, the opening up of new sustainable drinking water resources through textiles, and much more. More than a few of our members are globally leading “hidden champions” among German small and medium sized enterprises in this field.

As an industry that spans all sectors and enriches them with its diverse innovations, textile manufacturing is one of the key technologies in protecting the environment.

As always, the solutions come from new ideas and progress founded on professional expertise, not from any attempts to “tweak” the problem itself. We textile manufacturers are researching into solutions that will make our world a better place. Highly qualified research scientists in our innovative member companies are working hard on this every day, supported by Forschungskuratorium Textil (FKT), the central research association in Berlin, and the 18 textile research centres all across Germany.

This is why the promotion of research is the shrewdest way to invest in global environmental protection and ensure that German environmental technologies will remain at the cutting edge in future. Every further euro that promotes research into new textile technologies is money well invested in creating solutions to the environmental issues of our time.

Immissions of microplastics from textiles are already trending towards zero in Germany

Nearly all studies of textile microplastics conducted up to now have focused solely on the examination of emissions, or what is emitted by textiles when washed, and then projected the overall quantities from these findings. Consequently, the results vary widely from one study to another and the spectrum of estimated synthetic fibre emissions, as projected for the European Union, ranged between about 500 and as much as 51,200 tonnes per annum.

However, many of these studies have little to do with reality. Their sheer spectrum shows that some of them were fuelled by sensationalism: the higher the figures, the more attention will be paid to them by the media. Thus runs the argument. After all, everybody washes clothes. But none of these emission based studies answers the real question: what really does end up as textile immission in the marine environment?

The answer to this question, which is closely linked with the retention of textile microplastics in German wastewater treatment plants, shows a very different picture. The latest data shows that, according to reliable estimates, textile fibre immission from Germany's 83 million inhabitants is significantly less than 10 tonnes per year and still decreasing. The decisive factor is that textile microplastics are removed in the existing three-stage wastewater treatment plants, both during the mechanical purification stage and by absorption into the sludge, and are subsequently converted into thermal energy.

It is evident that here too, as in the case of macroplastics, everything rises and falls with the use of modern environmental technology. If the performance of textiles in filtering out microplastics from other sources in our wastewater treatment plants is included in the calculation, the textile microplastics balance is completely reversed and becomes entirely positive. State-of-the-art textile filters in four-stage wastewater treatment plants will make it largely possible to reach the goal of zero microplastics immission in this area.

Due to the countless combinations of fibres and materials, yarns, fabric manufacturing processes, finishing processes, equipment etc., textiles are highly complex in their diversity. This is totally underestimated by EU legislators, particularly in the context of REACH, as has been shown by the relevant restriction processes of ECHA.

Because of the circumstances described above, it is wrong to single out and stigmatise any particular groups of textile products such as fleece articles etc., for the purpose of defaming microplastics in textiles. When it comes to categorising these in legislation, many people will finally notice that ecologically beneficial, washable microfibre wipes, velour articles like those that are used in the filtration of microplastics in wastewater treatment plants, and also the practical Velcro fasteners on washable medical textile products and many other textile articles, are very closely related to fleece fabric. The same can be said of short fibres and their application in diverse products.



Where microplastics are concerned, no single textile can exemplify thousands of completely different textiles! Fleece jackets are just a diversion in a debate about microplastics in textiles that has so far lacked professionalism. The truly relevant immission of macro- and microplastics from other sources is barely considered at all.





From scientific research to attempts to tweak the problems, through to pure eco-research business models that do not exist as such – everything is on offer at the moment!

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für Bildung und Forschung

Plastik
in der Umwelt

Quellen • Senken • Lösungsansätze

PLASTIKNET



Pilot projects on microplastics in textiles – genuine science or just ecological business models?

Despite all the above, more than fifty research projects in the field of textile microplastics are known to be ongoing across the world. It can only be hoped that these projects are taking place under the reliable scientific supervision of highly qualified textile experts, as the “results” achieved are often quoted indiscriminately in argumentation that does nothing to promote the protection of the environment.

In Germany, a joint project entitled “TextileMission” funded by the Federal Ministry of Education and Research (BMBF) to the tune of more than 1.7 million euros is primarily examining the situation in wastewater treatment plants. It is probably the largest textile microplastics project worldwide. In this context it will not be possible to ignore new textile filters like those that are being tested in a pilot wastewater treatment project in Berlin.

We await the results with great interest.

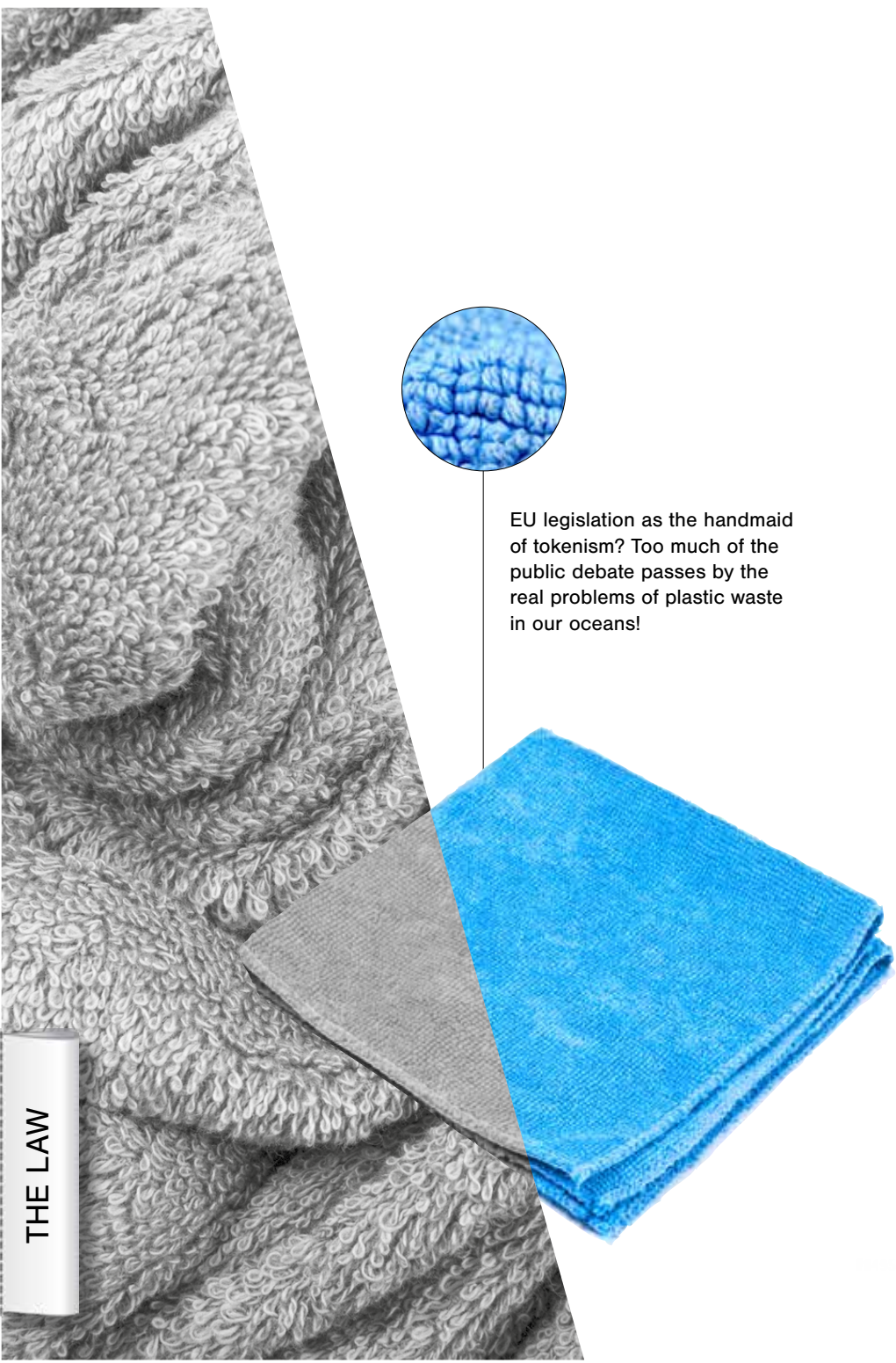
In other parts of Germany the defamation of textile microplastics is being pushed as a business model for fundraising purposes. Not long ago, a certain institute openly and publicly cast doubt on all outdoor textile products made of synthetic fibres. The project being conducted by the institute was linked with a fundraising project called “Microplastics in textiles”.



Photo: TextileMission joint project website

Source: <http://textilemission.bsi-sport.de/en/background/>





EU legislation as the handmaid of tokenism? Too much of the public debate passes by the real problems of plastic waste in our oceans!

THE LAW

Avoiding collateral damage in legislation

A policy of prohibitions cannot solve the problem of macro- and microplastics, but usually just causes unintended collateral damage. The same applies to projects that are not based on a problem-focussed, scientific foundation. Although textiles are part of the solution, it is to be feared that just such collateral damage will occur through REACH. Microplastics are authoritatively regulated in Europe under the European Registration, Evaluation, Authorisation & restriction of CHEMicals (REACH) legislation, and the first restriction proposal was published by ECHA on 30.01.2019 after only a year of preparation.

On closer examination, the ill-considered restriction proposal proves to be an extensive and radical ban on polymers that endangers entire sectors of EU industry, supply chains, the provisioning of the EU population and numerous environmental protection technologies.



ECHA's view of this issue can be seen in the film "The problem with microplastics" on YouTube (see QR code).

Photo: ECHA film "The problem with microplastics"



The ECHA video is only really about macroplastics. The rubbish dump that it shows has long ceased to exist in Germany as a result of a legal ban on dumping domestic waste. Why does the public institution ECHA paint such an unfairly distorted picture of the situation as though it were able to solve the global macro- and microplastics problem?

Unless REACH and ECHA adopt a professional stance without further delay, this will be a constant source of all kinds of negative effects in the economy, in medium-sized industrial companies and on the job market.

The real problem in our oceans cannot be solved in any way by a REACH regulation. Any attempt to regulate microplastics in a chemical regulating system such as REACH, using primarily physical control parameters, is doomed to failure and is bound to cause collateral damage. This collateral damage would entail disadvantages to everyone in the EU (consumers, the environment, employees and industry).

It is up to all of us – consumers, manufacturers and politicians – to tackle the issue of macro- and microplastics. Several truly constructive approaches have already been described in this brochure.



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