

What behaviour we want to change looking at hazardous substances in plastics?

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Hazardous substances – knowledge and behavior change
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Knowledge – actions – barriers



Photo by cottonbro from Pexels



Plastic and hazardous substances

- We already have the knowledge to certain extend
- Hazardous substances are unfortunately part of plastic - the invisible threat as we know it
- It is not straightforward and complicated to understand
 - Where is the personal touch?
 - How to transform the negative emotions into positive ones?
 - How to create the positive emotions?



Let's start

- What are more understandable and more personal thematic topics?
 - Close to your own health and skin - cosmetics, food contact, textile
 - Where is here the plastic component - does it all go down to microplastic?
- Our focus here is on hazardous substances and PLASTIC!



Undesirable outcome and undesirable behaviour

Let's take these personal topics:

- Cosmetics
- Textile
- Food contact material

What are in each case these undesirable outcomes and what kind of behaviour we want achieve?

- Barriers to overcome!



Cosmetics: the problem

- Although the personal care products contribute with ca 2% to microplastic in oceans
- We know the list of ingredients
- To detect there microplastic compounds is difficult especially because there are many used

Polyethylene (PE), Polypropylene (PP), Polymethyl methacrylate (PMMA), Nylon (PA), Polyurethane, and Acrylates Copolymer etc.



Behaviours leading to undesirable outcome

- Use of decorative cosmetics
 - Glitter
 - Rouge
- Use of conventional cosmetics
 - Scrubs
 - Masks
- Use of plastic packaging for cosmetic products
 - All cosmetic products



What is the desired behaviour?

In a first glance it is really straightforward

- Use decorative and conventional products which do not have plastic compounds
- Use less packed products or no packages at all
- Rethink if you really need all these products

WHAT are then the barriers and how to overcome them?!



Textile: the problem

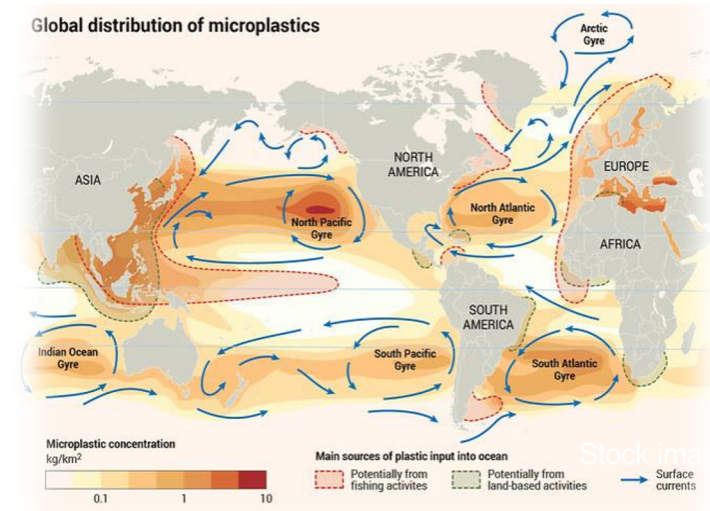


- **60 %** of textiles are made of fibers based on synthetic polymers (*acrylic, vinyl fibres, elastane, melamine, polyester, polyamide, polyethylene, polypropylene, synthetic rubber, etc.*)
- Fast fashion trends: reduced quality in the absence of minimum quality standards
- Global nature of the textile industry
-

EEA, 2019; ETC/WMGE, 2019

Microplastics in textile - knowledge

- Domestic washing - a large source of microplastics leaking into the environment.
- One laundry cycle with synthetic textiles can emit between 700,000 and 6 million microplastic fibres, representing up to 0.5 % of the product's total mass (OECD, 2020; Ziajahromi et al., 2017).
- The washing of synthetic textiles may account for up to 35 % of total annual microplastic releases to the oceans. (OECD, 2020).
- Up to 65 % of microplastics may be emitted to aerial environments during drying and wearing of garments (OECD, 2020).



Microplastics in textile

Our clothes shed microfibres – here do...

By Sienna Somers
1 YEAR AGO

During the month of February, we've been exploring fashion's impact on water and looking at how we care through our wardrobes. So far, we've discussed the consequences of industrial dyes, misconceptions a

Textile microfibres threaten post-COVID health

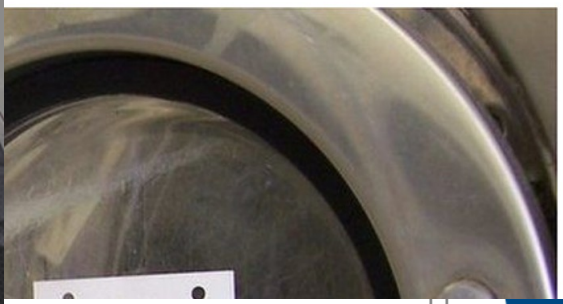
BBC Sign in Home News Sport Reel Worklife Travel

Science

Washing machines' microplastic filters 'untested'



15 Ways to Stop Microfiber Pollution Now

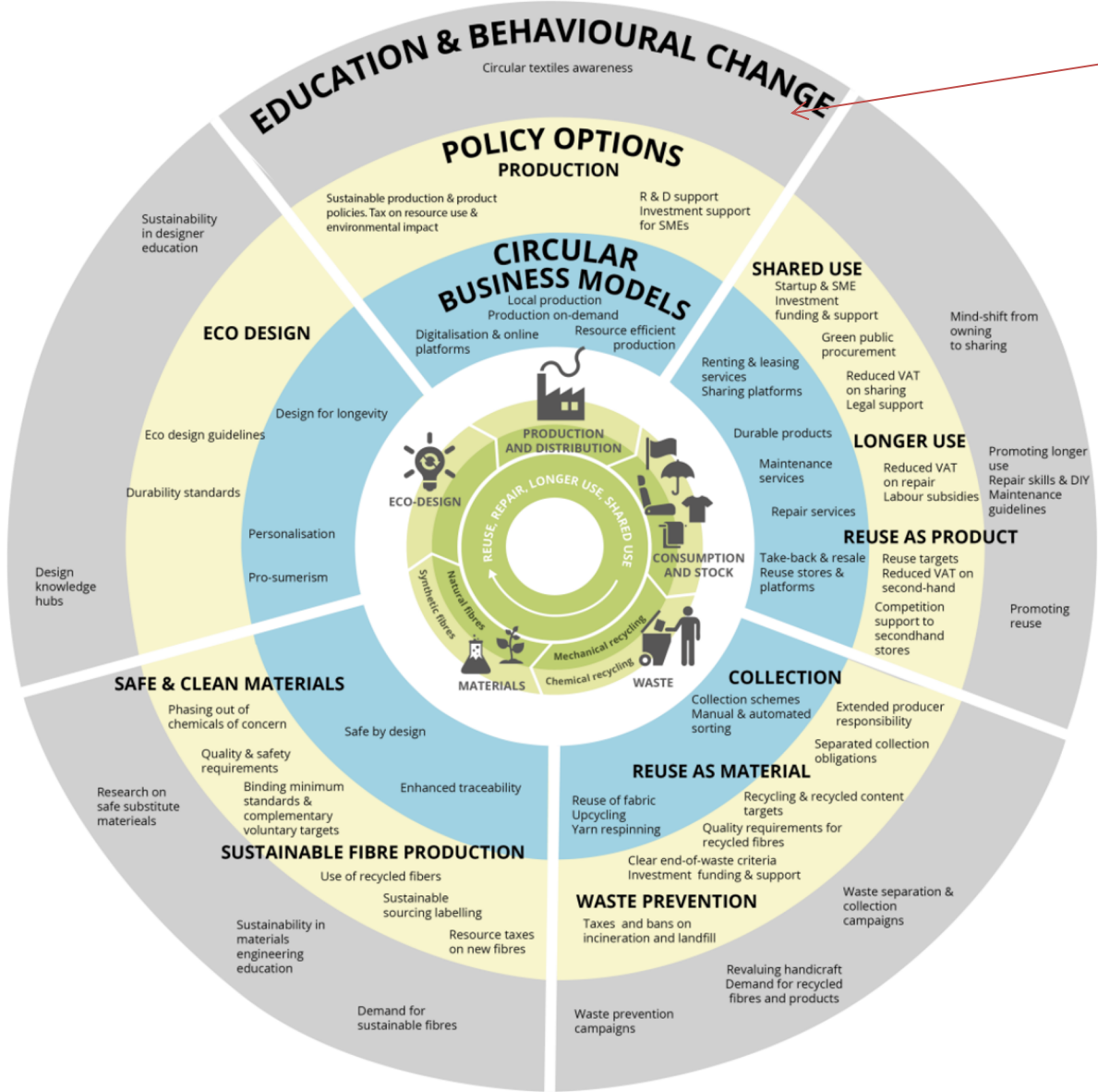


Incentives

- By 01 01 2025, EU Waste Framework Directive: to collect discarded textiles separately, thereby facilitate sorting, re-use and the recycling of textiles
- Fashion industry initiatives towards circularity: Global fashion Agenda, Sustainable Apparel Coalition, Fashion Positive etc.



Circular economy options for textiles



Sources: EEA (2019); ETC/WMGE (2019b)

Behaviour leading to "desirable outcome"

- Sustainable choice
- Correct laundry parameters applied
- Apply technical solutions and laundry supplements available that limit microplastic shedding during home washing
- Collection , sorting, reuse
- Renting, sharing or leasing of textile products

How shall we promote this behaviour leading to "desirable outcome" ???

Food contact materials: The Problem



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Chemicals with a health and/or environmental concern

- BPA: endocrine disrupting properties
 - Used in production process, hardens plastic
 - e.g. plastic packaging
- PFAS: linked to small decreases in birth weight, EDC, persistent in the environment (found everywhere)
 - making materials and products water-resistant
 - e.g. non-stick coatings (teflon pan)
- Phthalates: endocrine disrupting properties
 - Makes plastics softer
 - e.g. plastic foil
- ...



Undesired behavior & change

1. Using take away boxes made from plastics for hot, greasy and/or acidic food (single use).
2. Fatty foods packed in PVC-plastic foil (e.g. for cheese).
3. Using non-stick coatings (PTFE).
4. Reusing single use FCM as food packaging (e.g. ice cream boxes, plastic bottles).
5. Microwaving plastic dishware (microwave-proof plastics).

1. & 2. Use own boxes made from stainless steel, glass or ceramics.
Eat on the spot (don't take it away).
Or at least use lower risk plastics (PP, PE).
3. Use alternatives: ceramic/cast steel/iron cookware.
4. Only use it once, only use it for what it is made for; Best to use reusable bottles, containers, other dishware designed for reuse.
5. Use glass or ceramic for heating up food in the microwave, like a plate or container.



The cotton bag example



The cotton bag example



Barriers could be:

- Lack of knowledge
- Forgetting
- Identity, traditions
- Comfort / lack of easy alternative
- ...



Your turn!

- Contribute to the plastic campaign:
#NonHazPlasticDiet
- Launch in May



NONHAZCITY
PLASTICS AND THE HIDDEN
THREAT TO YOUR HEALTH

Questions for the working groups:

- *What are barriers?*
- *How can we overcome them?*
 - Personal touch? Role models?
 - How to transform the negative emotions into positive ones?

