

PRODUCT DEVELOPMENT

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TEXTILE PRODUCT

100% polyester composition
Redwood Dress By Alcer



Micro plastics
found in the ocean



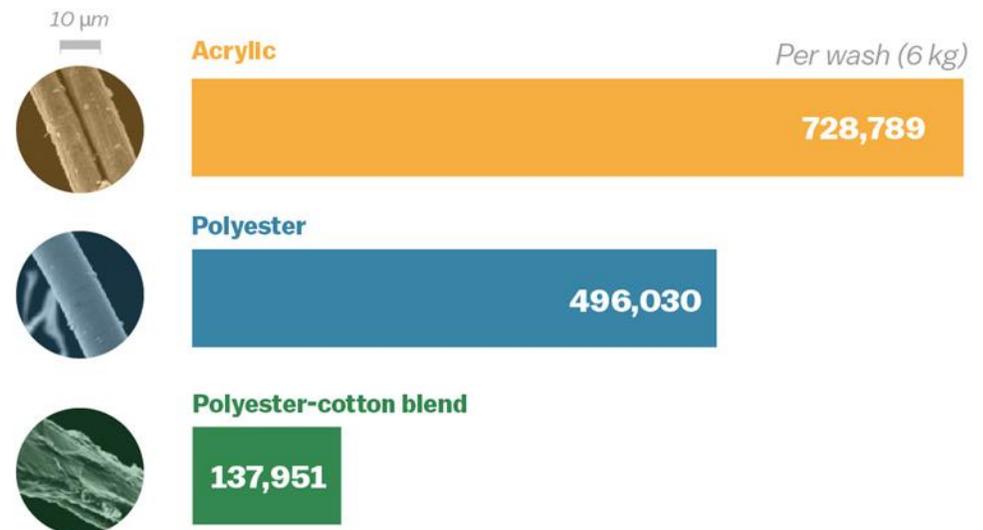
WHAT ARE MICRO PLASTICS?



PLASTIC USE IN FABRICS

- 60% of the textile material is made up of some form of plastic (polyester, nylon, acrylic etc.)
- When synthetic fabrics are cleaned in washing machines, some of the fiber separates from the fabric.
- Since they are extremely small in size, there is no filter inside washing machines to collect them.
- A single load of laundry in a washing machine contains hundreds of thousands of small fibers.

Estimated fibers released from wash

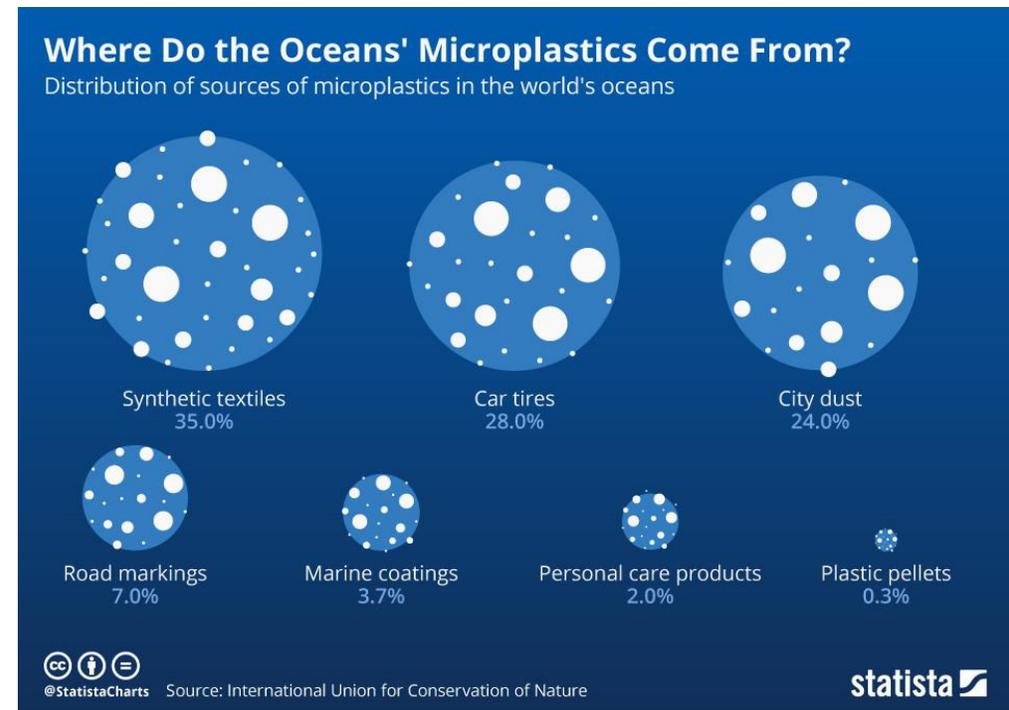


Source: Marine Pollution Bulletin

Vox

PLASTIC GETS DUMPED IN OCEAN

- These tiny plastic fibers are carried away in the water from the washing machine and are often dumped in oceans through the sewage.
- Most of these fibers are less than 5 millimeters
- Although these plastics are extremely small they contribute to oceanic pollution in a significant way which harms marine life and accumulate in the food chain.

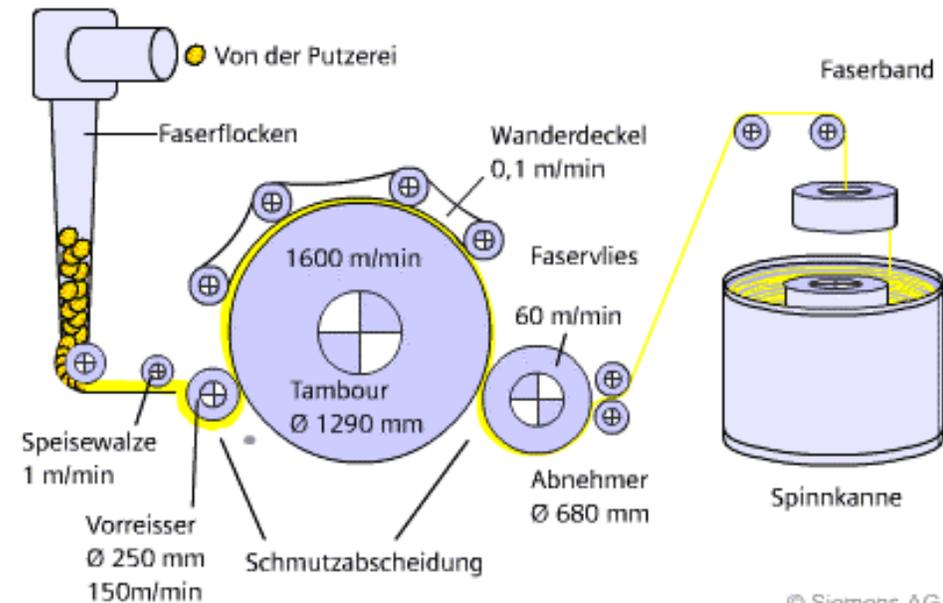


HOW MICRO PLASTIC POLLUTES THE OCEAN



PROCESS OF RECONSTRUCTION

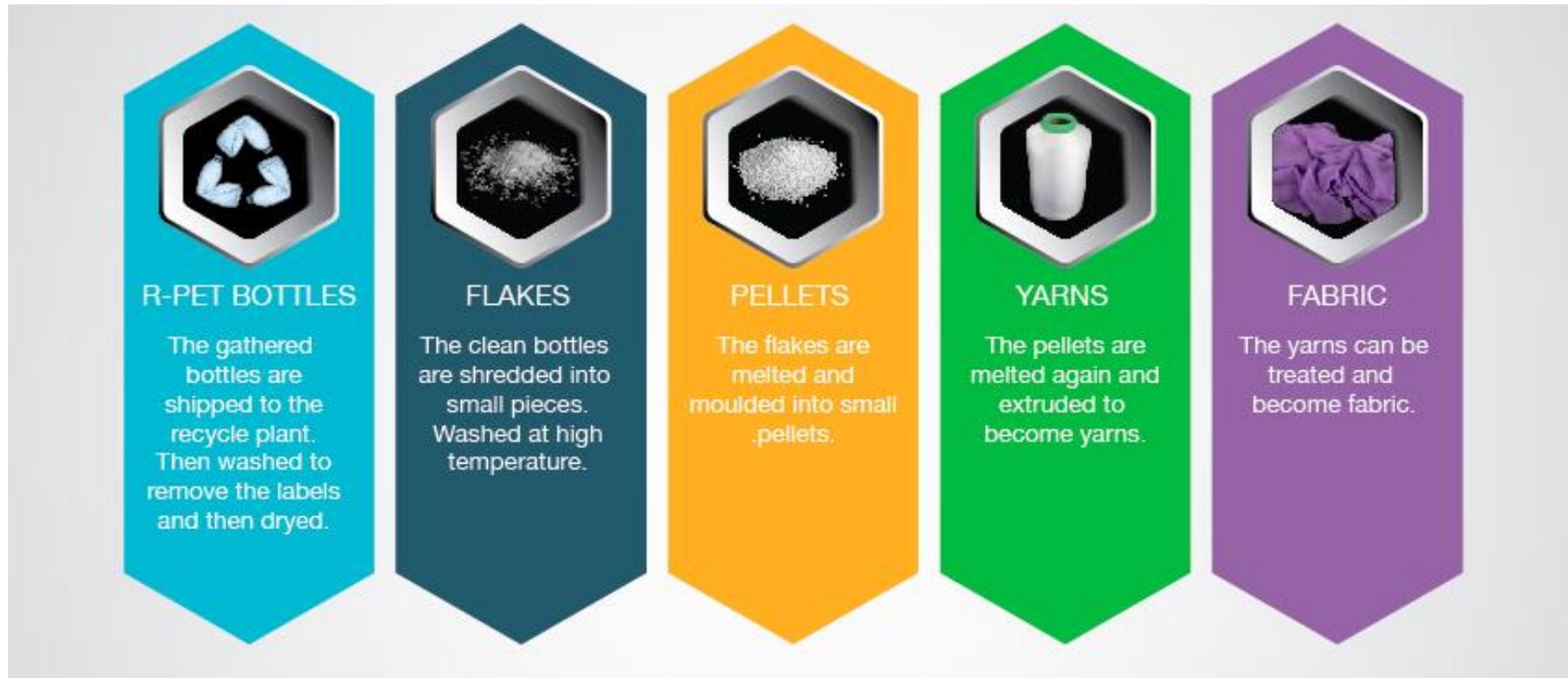
1. Micro plastics are collected from the ocean and filtered
2. The colors are then sorted; white plastic can be used as itself or dyed another color
3. Placed in oven and mixed with other light colored plastics to form melted plastic
4. Passed through a sieve which turns it into plastic threads
5. Stretched out and torn apart to strengthen the threads
6. Process of carding occurs; bonded fibers are brushed together in the same direction
7. Polyester thread spun and stretched and fed through a loom to make a cloth
8. Cloth is cut out and tailored to make a textile product



SIMILAR PROCESS OF USING PLASTIC WATER BOTTLES TO MAKE FABRICS



THIS PROCESS IS USED FOR MICRO PLASTICS AS WELL BUT DUE TO THE MICRO PLASTICS BEING SMALL IN SIZE THE FIRST TWO STEPS ARE NOT NEEDED.



APPLICATION AND FUNCTIONALITY

- between 15 to 51 trillion pieces of micro plastic in the ocean
- Recycled materials are used instead of new material
- Less strain on water pollution
- Extremely versatile, good stretching ability and breathability
- Opens the market of environmental friendly consumers
- Consumers more inclined to buy products



SOURCES

- <https://www.vox.com/the-goods/2018/9/19/17800654/clothes-plastic-pollution-polyester-washing-machine>
- <https://www.youtube.com/watch?v=zyF9Mxlcltw>
- <https://www.nationalgeographic.org/encyclopedia/microplastics/>
- <https://www.independent.co.uk/extras/indybest/fashion-beauty/best-brands-turning-recycled-plastic-bottles-clothes-a8774446.html>
- https://youtu.be/E_8MK5TRS3g
- <https://oceanservice.noaa.gov/facts/microplastics.html>
- https://www.youtube.com/watch?v=h7dclG1rj_I

THANK YOU 😊

