

Microplastics from textiles

Impacts



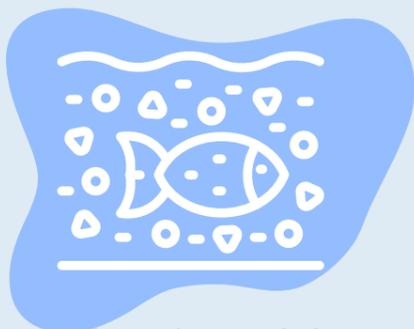
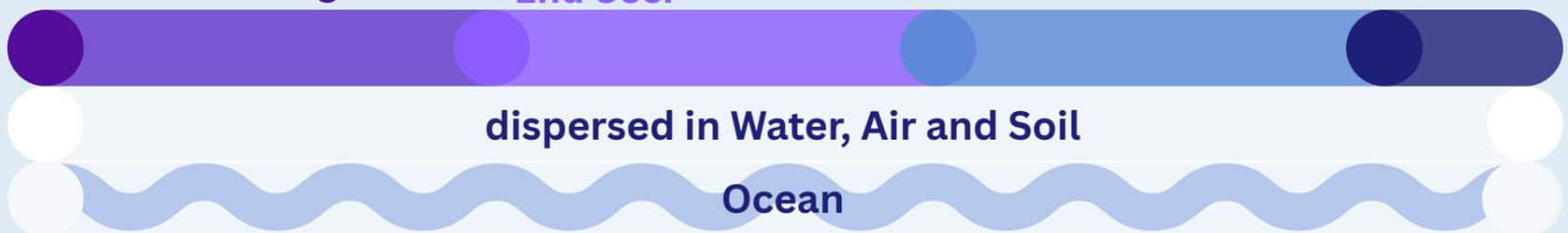
Environmental and Health Concerns^{4,5}

- Microplastics are ingested or inhaled by marine life, land animals, and humans.
- Detected in food and drinks such as seafood, water, and soft beverages.
- Risks include toxicity, inflammation, and pathogen transport; although, long-term effects remain uncertain.

Releases happen throughout the whole product lifecycle^{1,4}

especially from⁴ fast fashion

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| <ul style="list-style-type: none"> • Raw Material Processing • Material Production • Finished Product Assembly • Transportation | <ul style="list-style-type: none"> • Washing of synthetic textiles • Garment aging (fabrics wearing out) • From prints, coatings, buttons, and glitter. | <ul style="list-style-type: none"> • Waste (incinerate/landfill) • Reuse | |
| ● Textile Manufacturing | ● Use - Care by End User | ● End of Life | ● Recycling |



Water

- Released to rivers, lakes, and seas through wastewater and run-off.
- Easily ingested by aquatic organisms due to size and shape.
- Can block digestive tracts and enter the food chain, reaching humans.
- Detected in drinking water, bottled water, and other beverages.



Air

- Emitted during wearing, drying, and handling of textiles.
- Present in both indoor and outdoor air; highest indoors.
- Can be inhaled, contributing to human exposure.



Soil

- Deposited from air or transferred through sewage sludge used as fertiliser.
- Also released from littered or landfilled textiles as they degrade.
- Can be transported deeper into soil layers by organisms such as earthworms.

References:

4. European Environment Agency (2022). Microplastics from textiles: towards a circular economy for textiles in Europe. <https://www.eea.europa.eu/en/analysis/publications/microplastics-from-textiles-towards-a-circular-economy-for-textiles-in-europe> [12 September 2025]
5. Periyasamy, A.P. & Tehrani-Bagha, A. (2022). A review on microplastic emission from textile materials and its reduction techniques. *Polymer Degradation and Stability*, 199, 109901. doi:10.1016/j.polydegradstab.2022.109901
6. Akyıldız, S.H., Fiore, S., Bruno, M., Sezgin, H., Yalcin-Enis, I., Yalcin, B. & Bellopede, R. (2024). Release of microplastic fibers from synthetic textiles during household washing. *Environmental Pollution*, 357, 124455. doi:10.1016/j.envpol.2024.124455