Synthetic microfibers – a type of microplastics (< 1 mm) shed by synthetic clothing and other textile products.

Synthetic microfibers are found everywhere in the world from rivers, oceans and shorelines to animals and human bodies. They are released into the environment during household washing of synthetic clothing (e.g., polyester, acrylic, etc.).

Results of various studies confirm that domestic washing parameters have an impact on microfiber release [1, 2].

The aim of this study — to determine under what conditions clothes made of synthetic materials are washed and what parameters are used most frequently during domestic washing.

METHODS

- Quantitative method.
- Online survey on social media platforms.
- 9 questions (open and possible answer options).
- Active from 24/03/2022 to 11/04/2022.
- 146 respondents.

REFERENCES


RESULTS & DISCUSSION

Mechanical impact (higher spin cycle speed) can cause more shed. Synthetic clothing dry faster and doesn’t require high spin cycle speed.

Greater amount of microfiber is released when top-loading washing machines are used.

A less filled drum (higher water and laundry ratio) causes more microfibers to shed, but a fully filled washing machine drum might affect washing quality.

Higher washing temperatures can cause more shed. A cold water is sufficient to wash lightly soiled clothes.

Higher pH (detergent use) can cause microfiber release. Powder detergent has the highest pH.

CONCLUSIONS

- The most frequently used spin cycle speed: 800 rpm, 1000 rpm and 1200 rpm.
- The most popular washing cycle durations: 60 min, 30 min, 45 and 120 min.
- The most popular washing temperatures: 30°C and 40°C.
- 74.0% of respondents use front-load washing machines.
- 54.8% of the respondents fill about 75% of the maximum capacity of the washing machine’s drum. 45.2% of the respondents overfill or underfill it.
- 51.7% of respondents never use fabric softener.

Fabric softener reduces the friction between fibers (mechanical impact).