

1. Test microfiber retention

■ Test setting:

- Washing machine load of 6 PES-Fleece jackets is washed with a standardized washing program at 40°C without detergent, dirt or other additives
- 100ml unfiltered sample is taken as a reference form the washing sud, when pumped out of the machine (after first washing cycle)
- Washing sud is pumped directly through externally installed PlanetCare filter filled with four “filter stripes”; 100ml sample is taken directly after the filter
- Both samples are filtered separately over a 1,6µm glass fiber lab filter.
- Digital images of both 1,6µm glass fiber lab filter are taken with the microscope with a optical magnitude of 50.

■ Evaluation process:

- Fibers on reference and filtered sample are counted manually and with image processing algorithm
- Retention rate is calculated:

$$\text{retention rate (in \%)} = 100 - \frac{(\text{number of fibers in filtered sample}) * 100}{(\text{number of fibers in reference sample})}$$

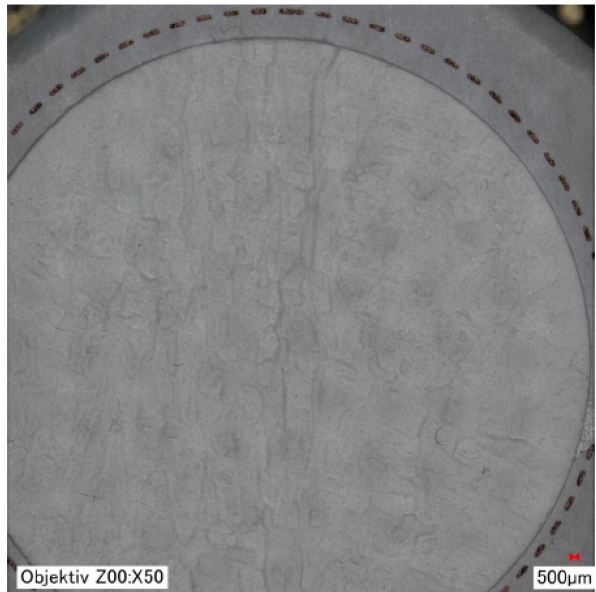
2. Reference filter

- 100ml washing sud filtered through 1,6µm lab filter
- # fibers counted 1548 on filter
- \cong 15480 fibers/l



3. Planet care filter

- 100ml washing sud filtered PlanetCare filter and then through 1,6µm lab filter
- # fibers counted 304 on filter
- $\hat{=} 3040$ fibers/l



4. Retention rate

- Calculation:

$$\text{retention rate (in \%)} = 100 - \frac{(\text{number of fibers in filtered sample}) * 100}{(\text{number of fibers in reference sample})}$$

$$\text{retention rate} = 100 - \frac{304 * 100}{1548} \approx 80\%$$

- Around 80% of the fibers of released when washing 6 PES fleece jackets are retained by the PlanetCare filter (filled with four stripes)