

## Supplementary Materials

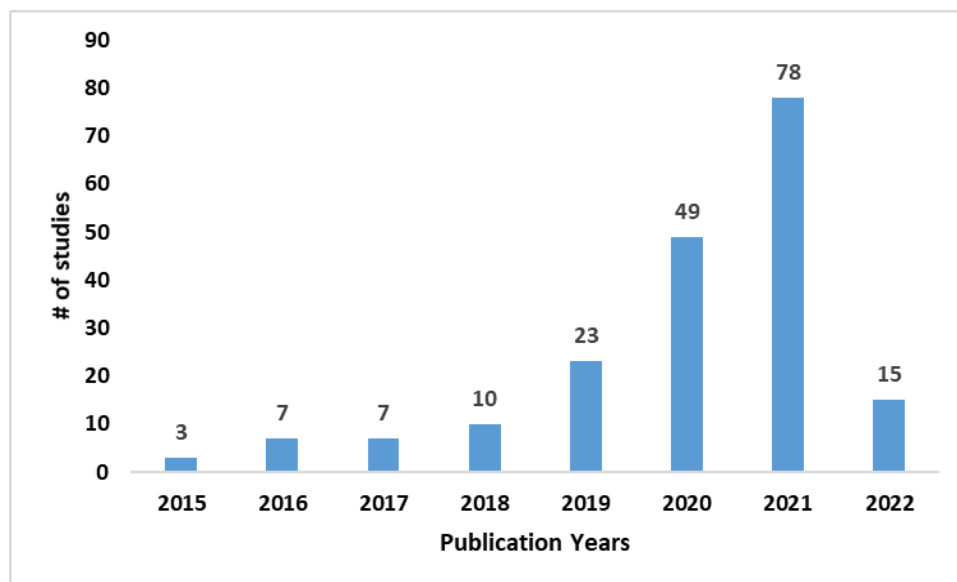


Fig. S1 Number of research and review publications with the keywords “microplastic or microplastics” and “wastewater” in the publication titles (date of access 22.02.2022; Web of Science).

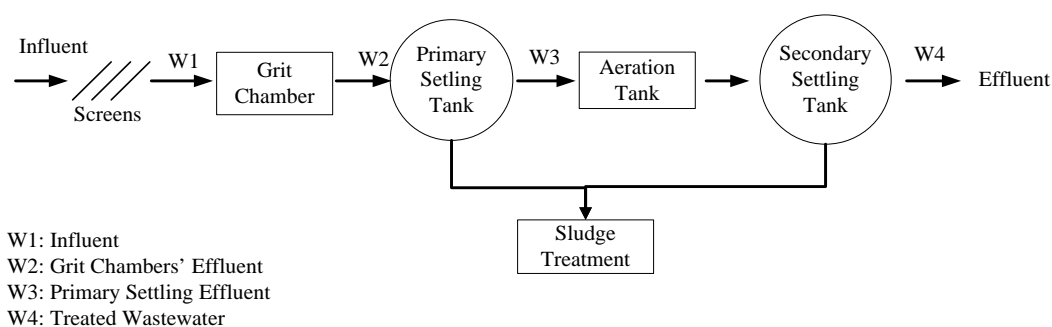


Fig. S2 Flow chart of the WWTP and illustration of sampling points.

Table S1 Characteristics of wastewater samples.

Sample	pH	COD (mg/L)	TSS (mg/L)	TS (mg/L)
W1	7.92	658.74	275	1090
W2	7.99	559.26	265	1064
W3	8.32	394.66	115	946
W4	8.64	< 50	17.5	736

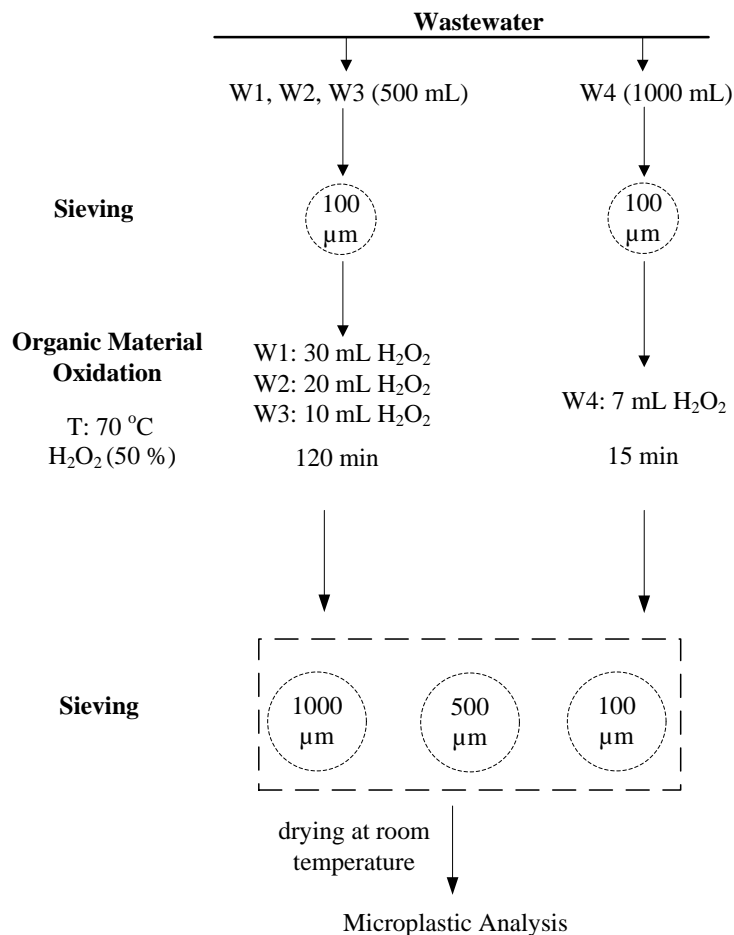
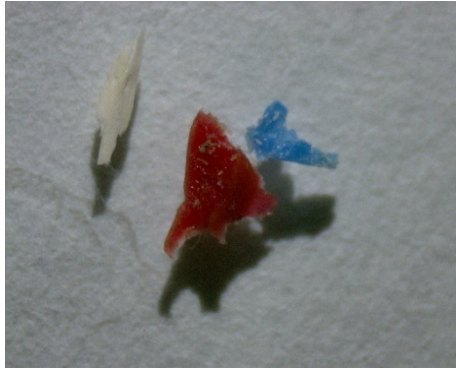


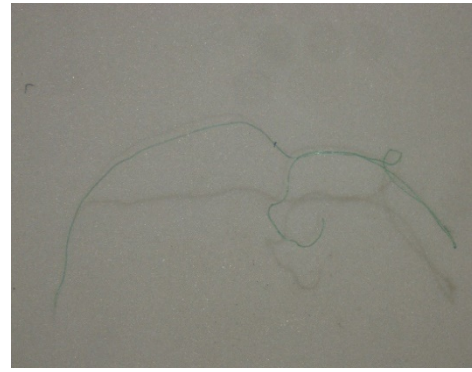
Fig. S3 Isolation procedure diagram of microplastics from wastewater samples.

Table S2 Microplastic recovery rates in wastewater samples and TSS removal efficiencies.

Sample	Sample Volume	H <sub>2</sub> O <sub>2</sub> (mL)	Reaction Time (min)	TSS Removal (%)	Microplastic Recovery Rate in Mass (%)	Microplastic Recovery Rate in Number (%)
W1	500 mL	30	120	92	99.87	100.00
W2	500 mL	20	120	93	99.98	100.00
W3	500 mL	10	120	95	99.81	100.00
W4	1000 mL	7	15	–	99.99	100.00



(a) W1: pink, white and blue fragment  
( $> 1000 \mu\text{m}$ )



(b) W2: green fiber ( $> 500 \mu\text{m}$ )

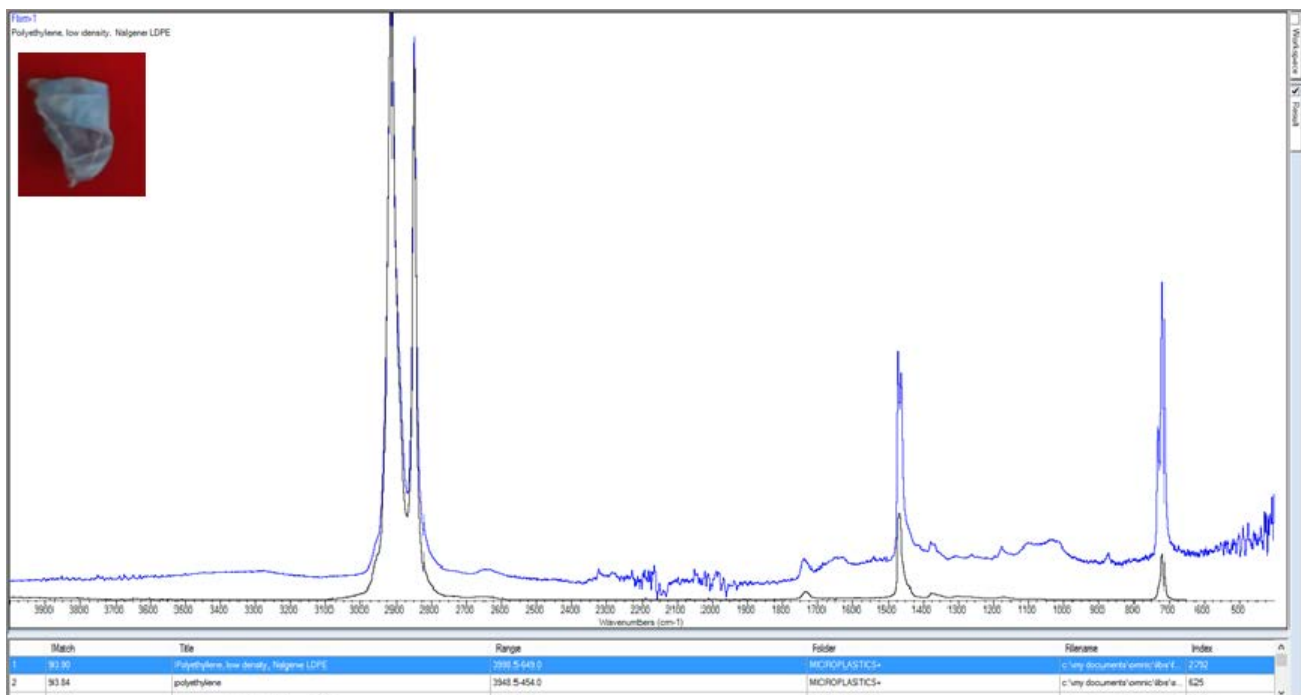


(c) W3: brown film ( $> 500 \mu\text{m}$ )

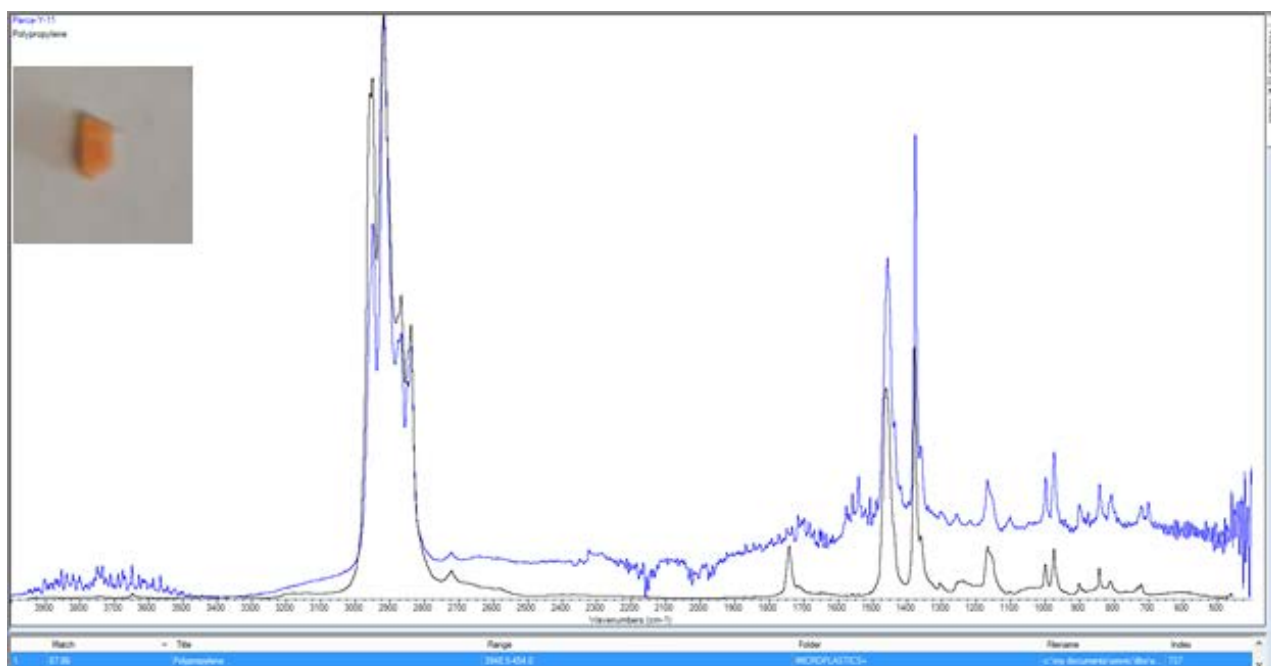


(d) W4: green fragment ( $> 500 \mu\text{m}$ )

Fig. S4 Images of microplastics in the form of fragments, films, and fibers present in wastewater samples under the microscope. (a) W1: pink, white, and blue fragment ( $> 1000 \mu\text{m}$ ); (b) W2: green fiber ( $> 500 \mu\text{m}$ ); (c) W3: brown film ( $> 500 \mu\text{m}$ ); (d) W4: green fragment ( $> 500 \mu\text{m}$ ).



**Fig. S5** FTIR spectrum of film-shaped microplastic (93.90% polyethylene).



**Fig. S6** FTIR spectrum of fragment-shaped microplastic (87.86% polypropylene).

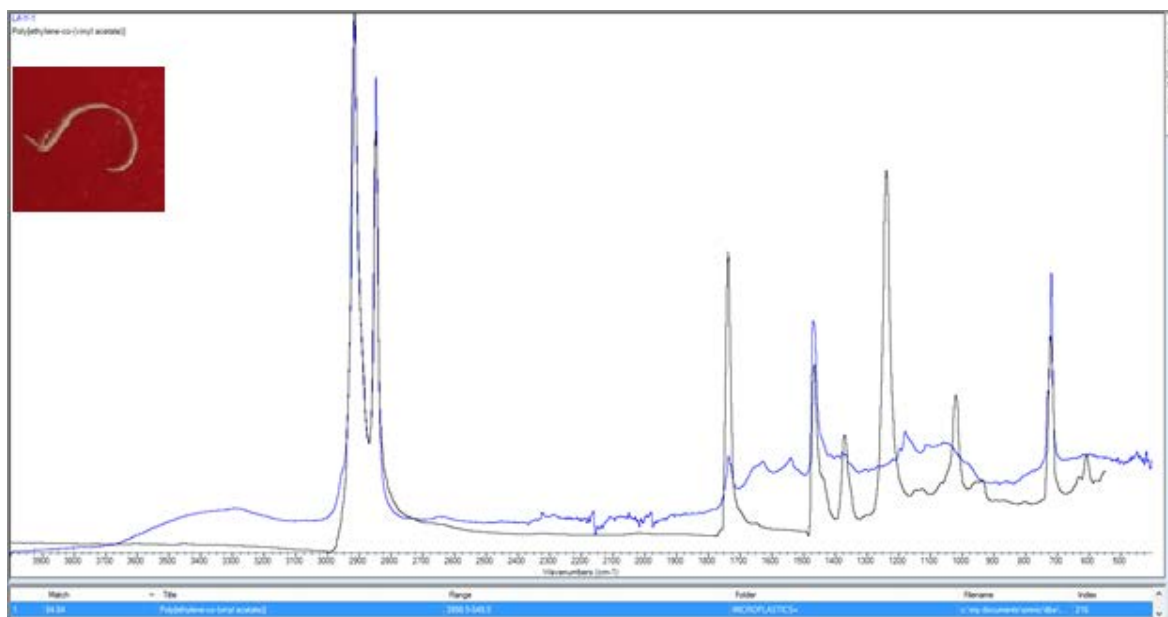


Fig. S7 FTIR spectrum of fiber microplastic (84.84% Polyethylene vinyl acetate).

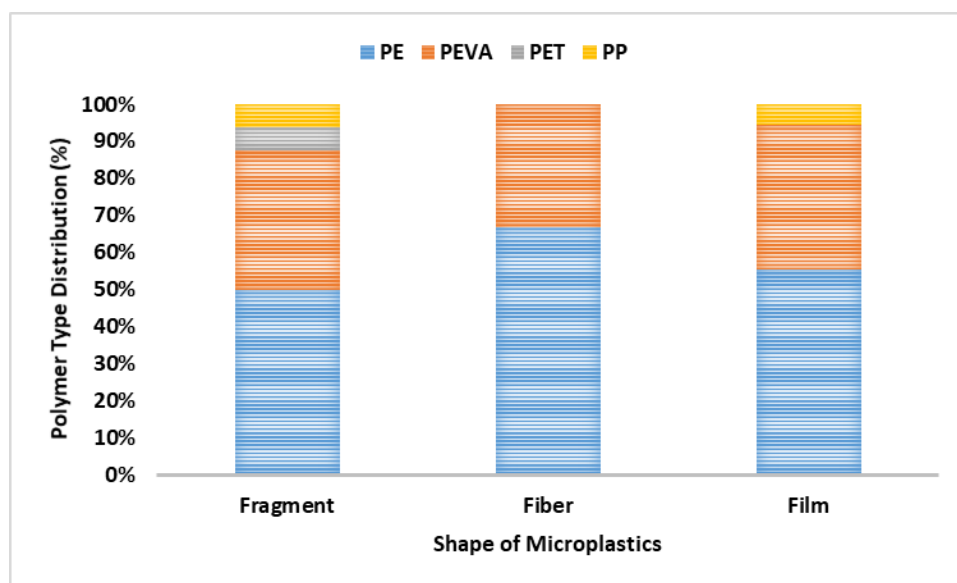


Fig. S8 Polymer type distribution according to microplastic shapes.

Table S3 Density values and possible sources of the polymer types were analyzed in the study (adapted from Andradý (2011)).

Polymer Type	Polymer Type Distribution (%)	Polymer Densities (g/cm <sup>3</sup> )	Usage Area
PE	54.05	0.91–0.95	Plastic bags, beverage cans
PEVA	37.84	0.94–0.96	Sports equipment
PP	5.41	0.90–0.92	The automotive industry, packaging, and textile industry
PET	2.70	1.34–1.39	Beverage bottles, kitchenware, textile industry