

**Interreg
Danube Region**



Co-funded by
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Project MicroDrink

Transnational monitoring database of microplastics in drinking water

*Drafted by Eurofins Environment Testing Hungary Kft.
and Croatian Geological Survey, with input from all
project partners*

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Project MicroDrink

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Specific objective:	2. Occurrence of microplastics in the water environment used for drinking water supply
Objective Leader:	Dr. sc. Gábor Bordós, Eurofins Environment Testing Hungary Kft.
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Project partners:



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1. Introduction

MicroDrink project began implementation under the Interreg Danube Region Programme in January 2024, and lasted for two and a half years until June 2026. Throughout project lifetime, 11 partners and 19 associated partners worked together to assess the state of the art of microplastics in drinking water across the Danube Region, conduct a one-year long pilot sampling and analysis campaigns in drinking water facilities, and build capacity for the eventual potential implementation of mandatory monitoring for microplastics in drinking water.

At nine pilot action sites, a novel sampling methodology was applied in raw and treated drinking water resources representing the three most common aquifer types in the Danube Region: karst, intergranular aquifers and surface waters and river bank filtration. After sampling, spectroscopy analytical techniques were applied on the samples to determine the occurrence of microplastics in Danube Region drinking water. The entire approach was harmonised across the partnership, and fully aligned with the recent recast of the Drinking Water Directive (EU) 2020/2184 and the provisions of the Commission Delegated Decision (EU) 2024/1441 which supplements the Directive and lays down the methodology for measuring microplastics in water intended for human consumption. This was the first time such a harmonisation was employed across borders, on a transnational scale, and represented a significant step toward data comparability and reliability, integration of science and policy development, and coordinated collaboration in heterogeneous administrative and governmental environments.

The Transnational monitoring database is made available in the spirit of freely sharing collected data to better address joint challenges that cross administrative borders. A frequently identified challenge in project MicroDrink, emphasized by stakeholders during interviews, consultations, discussions and workshops, is the lack of information on microplastics occurrence, given that most data is locked behind single studies or pilot projects. To address this challenge, the MicroDrink project consortium has produced the Transnational monitoring database, containing cumulative data from a one-year monitoring campaign with quarterly sampling and analysis at nine pilot sites across the Danube River Basin.

This document presents not only the results of the campaign, but also a brief overview of the sampling methodology, and supporting technical and guidance documentation developed by MicroDrink project which contain more detailed descriptions of the pilot sites and the monitoring approach. Through this initiative, MicroDrink project has significantly enhanced the knowledge and preparedness of stakeholders and crucial actors in the Danube Region in dealing with the emerging concern of microplastics contamination of drinking water and drinking water resources.

2. Sampling methodology

A harmonised sampling framework was applied across case-study sites based on minimum technical criteria aligned with Commission Delegated Decision (EU) 2024/1441, which lays down the methodology for measuring microplastics in water intended for human consumption under Directive (EU) 2020/2184.

The project applied a **closed filter-cascade system**, where water is passed directly from the sampling point into a stainless-steel cascade fitted with the required filter sizes (Figure 1). The **smallest mesh size used during sampling is 20 µm** (Figure 2), ensuring that all particles within the regulatory size window are retained. To detect and quantify potential contamination introduced during sampling, the harmonised sampling methodology aims for **blank generation** procedure, implementing subsequent filter of identical mesh size. A **difference compared to EU DWD** during the Microdrink project is that the filter cascade was not built as 100-20-100-20 µm, but 20-20 µm. The rationale behind is to **build a cost-effective sampling approach, while meeting the minimum particle size and procedural blank preparation requirements**. As no large particle or turbid water was expected during the sampling, the large filter area applied seemed to be a viable option to collect 1000 L of water sample without clogging. This resulted in a 50% reduction of the number of separate analyses necessary, which significantly eased financial constraints.

All operational variables – including sample volume, flow conditions, site characteristics, weather, and deviations from standard procedures – are documented on **harmonised sampling sheets**. This ensures that data from all countries and pilot areas can later be interpreted consistently.

To ensure consistent implementation of the harmonised approach across partner countries, a **joint sampling training session** was organised within the project. This public event allowed project partners to apply the agreed methodology under the guidance of experienced experts and ensured a common understanding of sampling procedures, contamination prevention measures, and handling of filtration systems. During this occasion, each project partner received a set of samples taken at the Hungarian pilot site, that were subsequently analysed in national laboratories, enabling interlaboratory comparison.

Following the training, **national sampling campaigns** were conducted in nine pilot sites across the Danube River Basin, where **project partners applied the harmonised approach independently** under different hydrogeological and operational conditions. Sampling was carried out across multiple drinking water resource types, including karst systems, intergranular aquifers, surface water, and riverbank filtration systems, covering both raw and treated water. The applied sampling systems followed the minimum technical criteria, including the use of closed cascade filtration systems. In practice, large water volumes were processed to support detection of low microplastic concentrations, with operational parameters adapted to site-specific conditions such as water quality, infrastructure, and accessibility.

DRINKING WATER SAMPLING



Figure 1. Sampling scheme applied at MicroDrink project pilot sites.

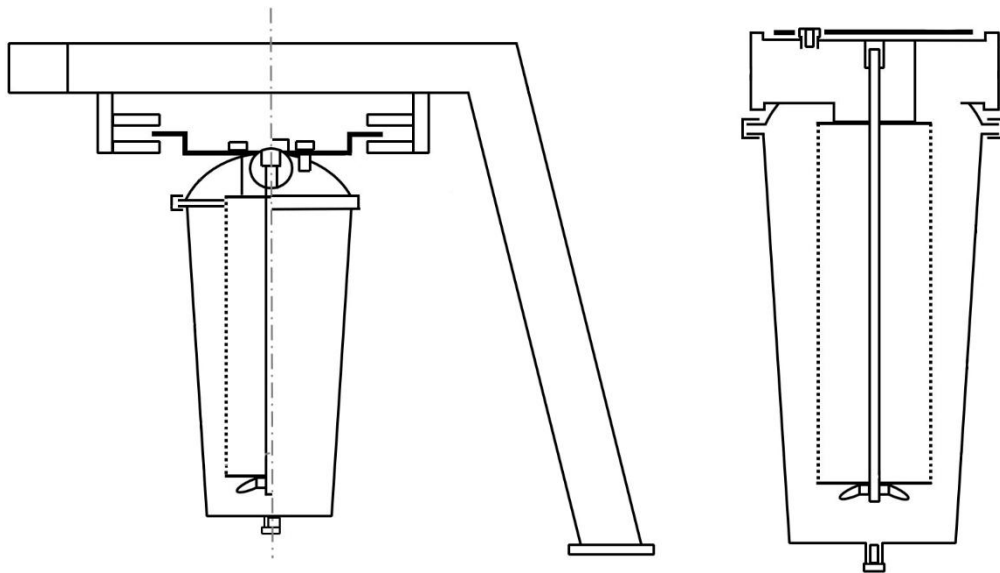


Figure 2. Sampling equipment design and cross-section of filter cartridges.

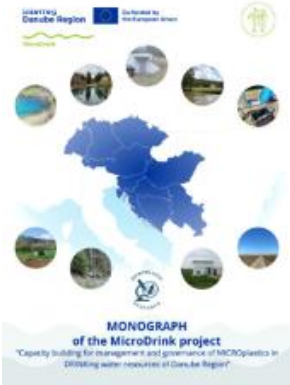

Laboratory analysis focused on the application of vibrational spectroscopy techniques suitable for identification of polymer types in drinking water matrices. FTIR and Raman spectroscopy represent currently established methods capable of supporting polymer identification within the size range defined by the Commission Delegated Decision 2024/1441.

This monitoring approach was tested at a transnational level as preparation for potential future mandatory monitoring of microplastics at drinking water facilities, with a focus on assessing feasibility and building monitoring capacity across the Danube River Basin.

3. MicroDrink project resources

The full description of the harmonised approach is provided in detail in documentation developed by project MicroDrink (Table 1). The *MicroDrink project monograph (e-book)* gives a detailed overview of the pilot sites, sampling may be studied in detail in the *Video guidelines for future* and Output 1.1 *Microplastics approach harmonized at EU and non-EU level*, general information on everything related to microplastics in water is provided in the *MicroDrink Knowledge Base* and educational *Micro(knowledge) transfer webinars*. Lastly, project MicroDrink also delivers tools and solutions for water managers and decision makers to use as support for decision making on development of policies, legislations and guidelines, action plans or internal procedures in dealing with microplastics in drinking water.

Table 1. MicroDrink project technical, guidance and educational materials and tools.

Technical and guidance documents		
Video guidelines for future sampling		
Project Monograph		

Roadmap Towards Microplastics in Drinking Water Strategy



Tools and solutions

MicroDrink Knowledge Base



Decision Making Support Tool



Output 1.1. Microplastics approach harmonized at EU and non-EU level

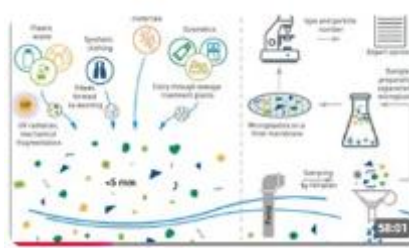


Educational videos on microplastics

[Micro\(knowledge\) transfer webinar on general state of the art of microplastics in drinking water](#)



[Micro\(knowledge\) transfer webinar on sampling, laboratory instruments and analytical techniques](#)



4. Transnational monitoring database

LEGEND

GREEN background: central lab

GREY background: no analysis planned

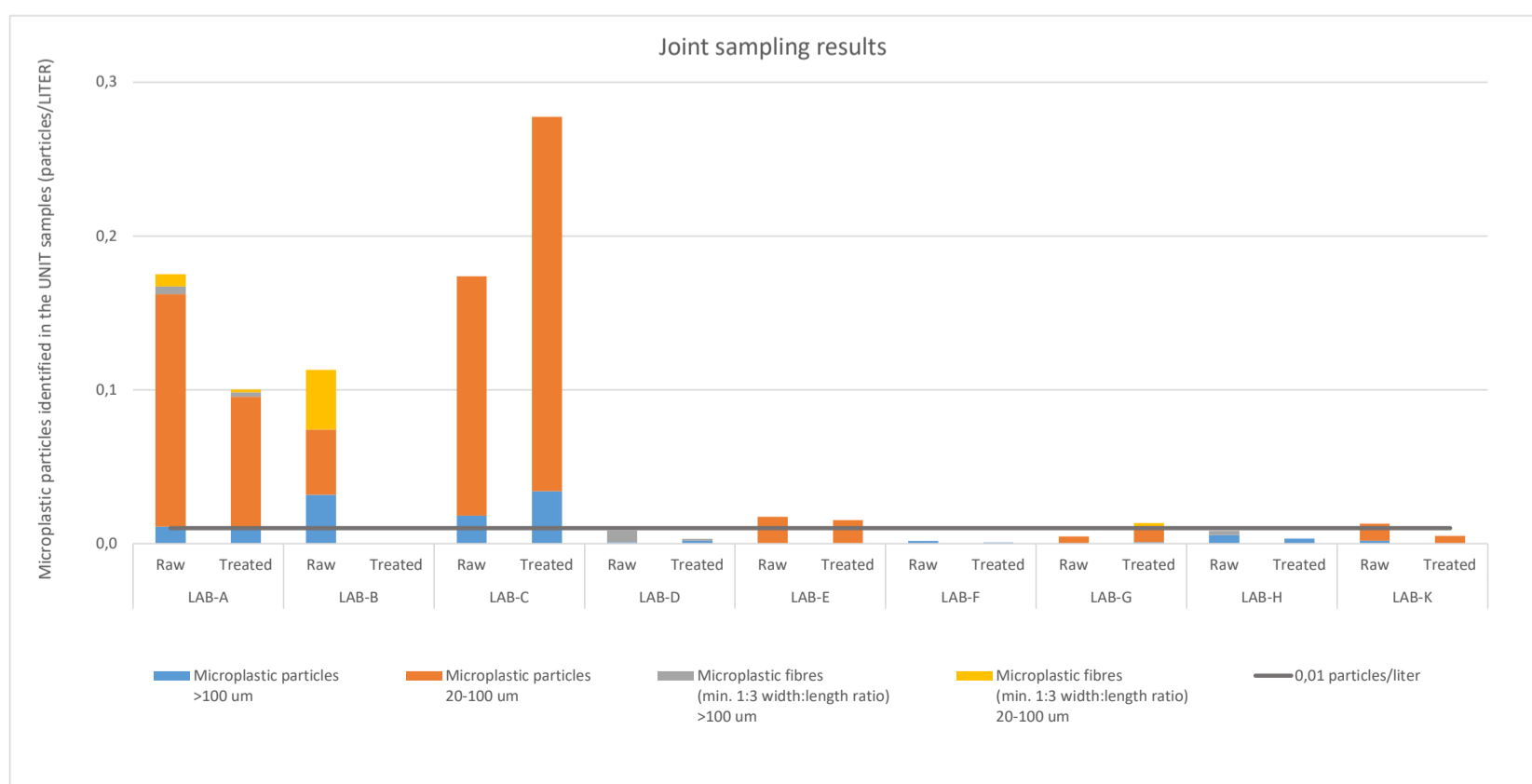
Microplastics polymers (Commission Delegated Decision 2024/1441)

PE	Polyethylene
PP	Polypropylene
PET	Polyethylene terephthalate
PA	Polyamide (Nylon)
PMMA	Polymethylmethacrylate
PVC	Polyvinylchloride
PU	Polyurethane
PS	Polystyrene
PC	Polycarbonate
PTFE	Polytetrafluoroethylene

Joint sampling training session - the same sample analysed in different local laboratories

Lab	National lab LAB-A		National lab LAB-B		National lab LAB-C		National lab LAB-D		National lab LAB-E		National lab LAB-F		Central lab LAB-G		National lab LAB-H		National lab LAB-K		
	Sample code	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated	Joint sampling Raw	Joint sampling Treated		
Water resource: (K: karst; I: intergr.; B: bank filt.)																			
Sample volume (L)																			
Microplastic particles >100 um	PE	1E-03	0,004	0,004	0	0,005	0,009	9E-04	0,002	0	0	0	9E-04	0	0	8E-04	0	0	
	PP	0,002	0,002	0,014	0	0,007	0,018	0	0	0	0	9E-04	0	9E-04	0,002	0,002	1E-03	0	
	PET	1E-03	0,002	0	0	0,002	0,005	0	0	0	0	9E-04	0	0	0,002	8E-04	0	0	
	PA	0,002	0,002	0	0	0,003	0,003	0	0	0	0	0	0	0	0,002	0	1E-03	0	
	PMMA	0,002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PVC	0,002	0	0,007	0	0,002	0	0	0	0	0	0	0	0	0	0	0	0	
	PU	1E-03	0	0,004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PS	0	0	0,004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Microplastic particles 20-100 um	PE	0,014	0,009	0	0	0,012	0,044	0	0	0,008	0,006	0	0	0,004	0,004	0	0	0	
	PP	0,084	0,028	0	0	0,087	0,162	0	0	0,003	0,009	0	0	0,006	0	0	0	0	
	PET	0,017	0,012	0,018	0	0,027	0,008	0	0	0,003	0	0	0	0	0	0	0,004	0	
	PA	0,023	0,032	0,004	0	0,021	0,024	0	0	0	0	0	0	0	0	0	0,002	0,002	
	PMMA	0,002	0	0	0	0	9E-04	0	0	0	0	0	0	0	0	0	0	0	
	PVC	0,003	9E-04	0,011	0	1E-03	0,003	0	0	0	0	0	0	0	0	0	0,002	0,002	
	PU	0,009	0,004	0,007	0	0,008	0,003	0	0	0	0	0	0	9E-04	9E-04	0	0	0	
	PS	0	0	0,004	0	0	0	0	0	0,004	9E-04	0	0	0	0	0	0	0,002	0
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1E-03	1E-03
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Microplastic fibres (min. 1:3 width:length ratio) >100 um	PE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PP	0,002	0	0	0	0	0	0	0	0	0	0	0	0	0	9E-04	0	0	
	PET	0,003	0,003	0	0	0	0,007	0,001	0	0	0	0	0	0	0,002	0	0	0	
	PA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PMMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PVC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PU	0	0	0	0	0	9E-04	0	0	0	0	0	0	0	0	0	0	0	
	PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Microplastic fibres (min. 1:3 width:length ratio) 20-100 um	PE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PP	0,005	0	0,011	0	0	0	0	0	0	0	0	0	9E-04	0	0	0	0	
	PET	0,002	0,002	0,021	0	0	0	0	0	0	0	0	0	9E-04	0	0	0	0	
	PA	0	0	0,004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PMMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PVC	0	0	0,004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PU	1E-03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

ALL POLYMER TYPES	LAB-A		LAB-B		LAB-C		LAB-D		LAB-E		LAB-F		LAB-G		LAB-H		LAB-K	
	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated	Raw	Treated
Microplastic particles >100 um	0,011	0,009	0,032	0	0,018	0,034	9E-04	0,002	0	0	0,002	9E-04	0	9E-04	0,006	0,003	0,002	0
Microplastic particles 20-100 um	0,151	0,086	0,042	0	0,156	0,243	0	0	0,017	0,015	0	0	0,005	0,01	0	0	0,011	0,005
Microplastic fibres (min. 1:3 width:length ratio) >100 um	0,005	0,003	0	0	0	0	0,008	0,001	0	0	0	0	0	0	0,003	0	0	0
Microplastic fibres (min. 1:3 width:length ratio) 20-100 um	0,008	0,002	0,039	0	0	0	0	0	0	0	0	0	0	0,002	0	0	0	0
0,01 particles/liter	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01	0,01



Results from national monitoring campaigns across nine pilot sites.

At each pilot site, four monitoring campaigns were conducted quarterly throughout one year. The results below are presented as average values of microplastics particles per liter.

Sample code	Water resource																																							
	Karst 1				Karst 2				Karst 3				Bank filtration 1				Bank filtration 2				Bank filtration 3				Intergranular 1				Intergranular 2				Intergranular 3							
	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated	National lab Raw	National lab Treated	Central lab Raw	Central lab Treated				
W_rsrc (K: karst; I: intergr.; B: bank filt.)	K	K	K	K	K	K	K	K	K	K	K	K	B	B	B	B	B	B	B	B	B	B	B	B	I	I	I	I	I	I	I	I	I	I	I	I				
Microplastic particles >100 um	PE	0,00249	0,0035	0	0	0,00474	0	0	0,00123	0,00271	0	0	0,00033	8,3E-05	0	0	0,00543	0,00294	0	0	0,00068	0,0005	0,0015	0	n.a.	n.a.	0,00028	0	0,001	0,00075	0	0	0	0	0	0				
	PP	0,00247	0,0075	0,00025	0	0	0,01175	0,00025	0	0,0022	0,00121	0,00024	0	0,00017	0	0	0	0,01658	0,00897	0	0	0,00049	0,0005	0,00075	0	n.a.	n.a.	0,00053	0	0	0,00075	0,00025	0	0	0	0,00025	0			
	PET	0,00099	0,00025	0	0	0	0	0	0	0,00099	0,00174	0	0	8,3E-05	0	0	0	0,01119	0,00738	0	0	0,0005	0,0005	0	0	n.a.	n.a.	0	0	0	0,00025	0	0	0	0	0	0			
	PA	0,00223	0,00225	0	0	0,001	0,00524	0	0	0,00072	0,00025	0	0	0,00069	8,3E-05	0	0	0,00747	0,0012	0	0	0,00025	0	0	0	n.a.	n.a.	0	0	0,00075	0,00075	0	0	0	0	0	0,00025			
	PMMA	0,00025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00025	0,0002	0,001	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0			
	PVC	0	0	0	0	0	0	0	0	0	0	0	0	0,00051	0	0	0	0,0005	0,00114	0	0	0,00043	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0			
	PU	0	0,00025	0	0	0	0	0	0	0,00025	0	0	0	8,3E-05	0	0	0	0,00025	0	0	0	0,00019	0	0	0	n.a.	n.a.	0	0	0	0,0005	0	0	0	0	0	0			
	PS	0,00025	0	0	0	0,00096	0,00098	0	0	0,0005	0	0	0	0	0	0	0	0,00025	0,0005	0	0	0,00173	0,00075	0,00025	0	n.a.	n.a.	0	0	0,0005	0	0	0	0	0	0	0			
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0			
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0,00017	8,3E-05	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0			
	Microplastic particles 20-100 um	PE	0,03724	0,03448	0,00249	0,00225	0,003	0	0,00646	0	0,03176	0,0255	0	0,01246	0,00017	0	0,00372	0,0005	0,03856	0,02502	0,00375	0,00125	0,00025	0,00199	0,01739	0,00197	n.a.	n.a.	0,03284	0,00025	0,00075	0,00249	0,00848	0,00025	0,00122	0,0005	0,0005	0,0005	0	0
		PP	0,09898	0,08194	0,01148	0,0035	0,00592	0,01438	0,00198	0,01086	0,0849	0,04689	0,00175	0,01268	0,00116	0,00017	0,0062	0,00673	0,10746	0,0907	0,009	0,00424	0,0005	0,00099	0,01915	0,00175	n.a.	n.a.	0,02915	0,00498	0,00075	0,001	0,01497	0,00474	0,00024	0	0,01661	0,00025	0	0
PET		0,0067	0,001	0,00025	0,001	0,00319	0,00098	0	0,001	0,00466	0,00335	0,00024	0,00073	0	0	0,00024	0	0,03207	0,02351	0,00025	0,00124	0,0005	0,00124	0,00548	0,00025	n.a.	n.a.	0,00789	0,001	0,00124	0,00125	0,00149	0,00168	0,00075	0,00023	0,0015	0,0015	0	0	
PA		0,0171	0,02322	0,00025	0,0065	0,00392	0,02641	0	0,001	0,01607	0,00346	0,0005	0,001	0,00195	0,00033	0,00672	0,00025	0,02866	0,0088	0,00425	0,01625	0,00149	0,01221	0,00075	n.a.	n.a.	0,01466	0,00025	0,00375	0,00225	0,00599	0,00674	0	0,00025	0,00372	0,00501	0			
PMMA		0,00124	0,00025	0	0	0	0	0,00025	0,00048	0,00025	0,00025	0	0	0	0	0	0	0,00025	0	0,00025	0,00025	0	0,0005	0	0	n.a.	n.a.	0	0	0	0	0,00025	0	0	0	0	0			
PVC		0,00099	0	0,00075	0	0	0,00992	0	0	0,00025	0	0	0	0	0	0	0	0,00447	0,000413	0,00025	0,00025	0,00025	0,00249	n.a.	n.a.	0	0	0	0	0	0	0	0	0,00341	0,00249	0	0			
PU		0,00346	0,00075	0,00175	0,001	0,001	0,00392	0,00024	0	0,0005	0,0005	0,00074	0	8,3E-05	0	0,0005	0	0,00473	0,00293	0	0,00099	0,00025	0,0015	n.a.	n.a.	0,00028	0	0,00524	0	0	0	0	0	0	0,00149	0,00025	0			
PS		0,00074	0,00075	0,00025	0	0,001	0,01594	0	0	0,0005	0,00428	0,00068	0	0,00025	0,00075	0,00042	0,000812	0,0005	0,0005	0,00099	0,0005	0,00299	0,00221	0,01174	n.a.	n.a.	0,00028	0	0,00025	0,00125	0	0	0,001	0,00149	0	0				
PC		0	0	0	0	0	0	0	0	0,00036	0	0	0	0	0	0	0	0,00025	0,00025	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0,001	0,00199	0	0			
PTFE		0	0	0	0	0	0	0	0	0	0	0	0	0,00253	0,00025	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0			
Microplastic fibres (min. 1:3 width:length ratio) >100 um		PE	0	0	0	0	0	0	0	0	0,00075	0,00025	0	0	0	0	0	0	0,00098	0	0	0	0	0,00349	n.a.	n.a.	0	0	0	0	0,00224	0	0	0	0	0	0	0		
		PP	0,00274	0,00375	0	0	0	0	0	0	0,00123	0,00174	0	0	0	0	0	0	0,00492	0,00199	0	0	0,03984	0	n.a.	n.a.	0,00028	0	0	0	0	0	0	0	0	0	0	0		
	PET	0,00297	0,0015	0	0	0	0	0	0	0,00145	0,00317	0	0	0	0	0	0	0	0,06334	0,02714	0	0	0,0005	n.a.	n.a.	0,00028	0	0	0	0	0	0	0	0	0	0	0			
	PA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00049	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0,0005	0	0	0	0	0	0	0			
	PMMA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	PVC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00025	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	PU	0,00025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0,00024	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	PS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	PC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	PTFE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
	Microplastic fibres (min. 1:3 width:length ratio) 20-100 um	PE	0	0,0005	0	0	0	0	0	0	0,00096	0,00025	0	0	0,00025	0	0	0	0,00024	0,00025	0,00025	0,00025	0	0,00125	n.a.	n.a.	0,00648	0	0	0,00025	0	0	0,00025	0	0	0	0	0		
		PP	0,00422	0,0085	0	0	0	0	0	0	0,00457	0	0,00023	0,00042	0	0	0,00025	0,00024	0,00075	0,00025	0,00025	0	0	0,00125	n.a.	n.a.	0,00078	0,00025	0	0	0,00025	0	0	0,00048	0	0	0	0		
PET		0,00075	0,00025	0,00025	0	0,00637	0,00098	0	0	0,00169	0,0005	0,00024	0,00836	0,00025	0	0,00198	0,00175	0	0,00198	0,00175	0	0	0	n.a.	n.a.	0,00085	0	0	0	0	0	0	0	0	0	0	0			
PA		0	0	0	0,00025	0	0,01396	0	0	0	0	0	0	0,00059	0,00058	0,00025	0	0	0	0,0005	0,00025	0	0,00125	n.a.	n.a.	0,00028	0	0	0,001	0	0	0	0	0	0	0	0			
PMMA		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
PVC		0	0	0	0	0	0	0	0	0	0	0	0	0,00026	0	0	0	0,00025	0	0	0	0	0	n.a.	n.a.	0,00028	0	0	0	0	0	0	0	0	0	0	0			
PU		0	0	0	0	0	0	0	0	0,00024	0,00025	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0,00025	0	0	0	0	0	0	0	0			
PS		0	0	0	0	0	0	0	0	0,00025	0,0005	0	0	8,3E-05	8,3E-05	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0	0	0	0	0	0			
PC		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	n.a.	0	0	0	0	0	0	0								