

# Outdoor Atmospheric Microplastics within the Humber Region (United Kingdom): Quantification and Chemical Characterisation of Deposited Particles Present

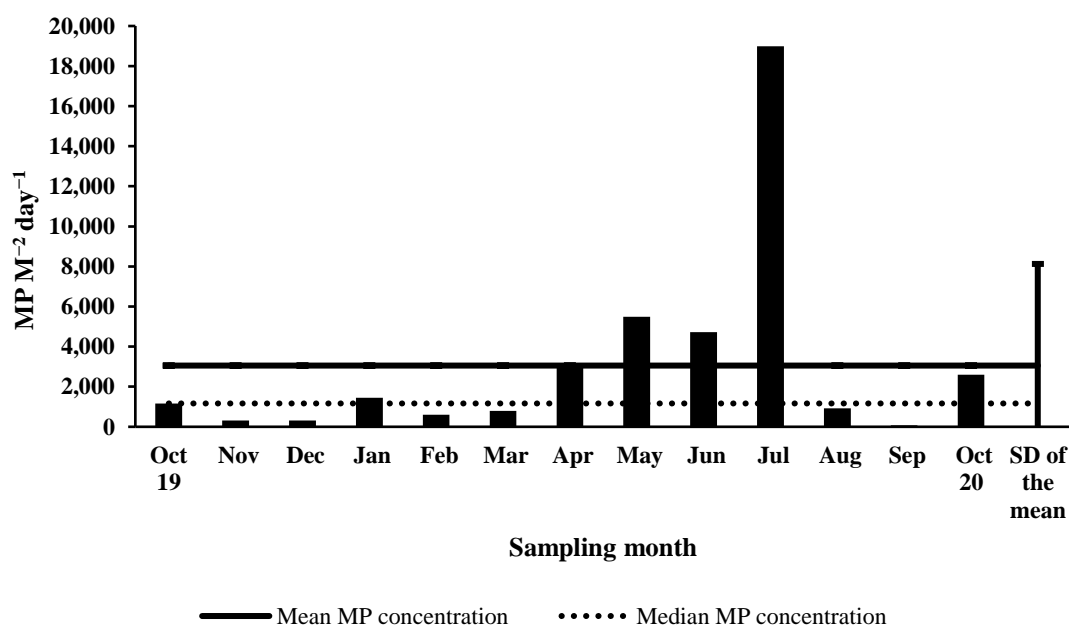
Lauren C. Jenner, Laura R. Sadofsky, Evangelos Danopoulos, Emma Chapman, David White, Rebecca L. Jenkins and Jeanette M. Rotchell

**Methods 1.** SM1 Calculation used to determine the LOD/LOQ for each MP polymer.

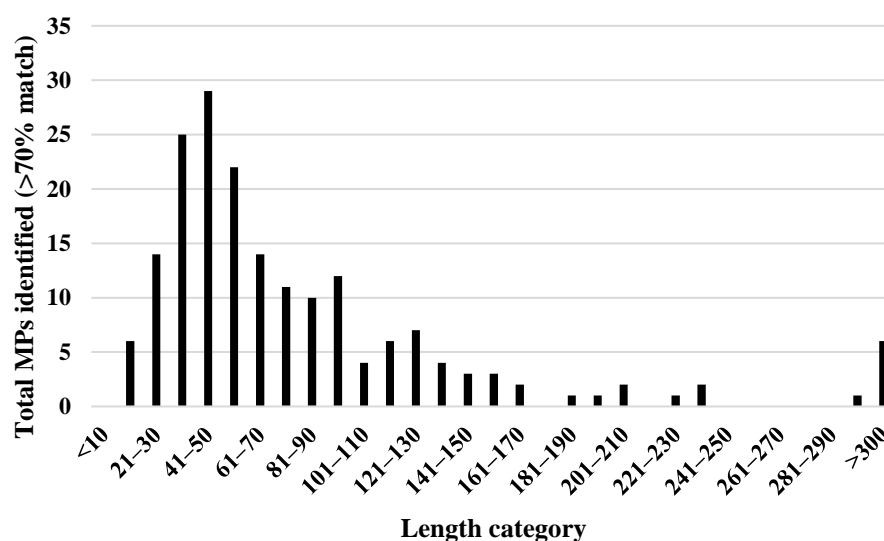
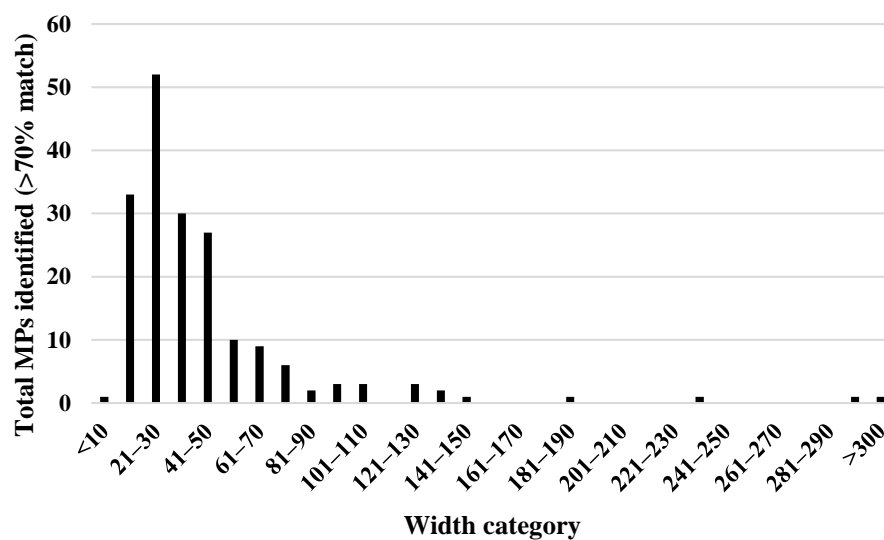
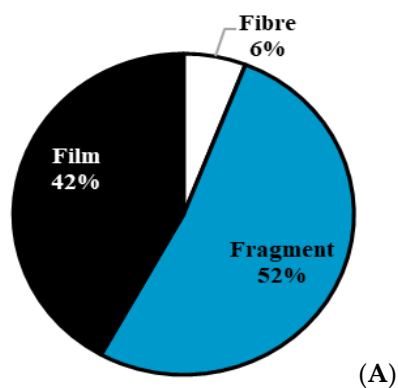
[A] = MP polymer quantity in analysed proportion of a sample	A = 2
[B] = MP polymer quantity in whole sample([A]*8) **	B = 16 (2*8)
[C] = Mean MP polymer quantity in blanks	C = 0.2±0.4
[D] = Blank correction ([B]-[C])	D = 15.80 (16-0.2)
[LOD] = 3*SD of [C] or 1.1 (whichever value is higher)	[LOD] = 1.2(3*0.4)
[LOQ] = 10* SD of [C] or 3.3 (whichever value is higher)	[LOQ] = 4 (10*0.4)

Blank corrected results above the LOQ will be included in final concentrations: [D] > LOQ included in results

\*\* For the two samples in which one quarter of the Anodisc was analysed by FTIR = ([A]\*16).



**Figure S1.** Chart showing the MP levels (MP m<sup>-2</sup> day<sup>-1</sup>) during each 2-week sampling period per month, for the 13-month investigation of Site 1. The solid bar indicates the mean value. Dotted line indicates the median value. April and May coincided with an official SARS-CoV lockdown.



**Figure S2.** MP characteristics observed in the atmospheric samples obtained from all sites, from a single 2-week sampling period. (A) shape, (B) length, and (C), width.

**Table S1.** The background level of MPs detected within procedural and laboratory blanks for the 13-month sampling at Site 1 and the 2-week investigation of 5 sampling sites. No MPs were detected in any of the 5 field blanks.

Procedural blanks	MPs identified	MP polymer type
1 (Site 1)	6	Nylon (2)
		PET (1)
		PP/ PE (1)
		PS (1)
		Resin (1)
2 (Site 1)	1	PE (1)
3 (Site 2, 3, 4, 5)	4	PES (1)
		PET (1)
		PP (1)
		TPE (1)
4 (Site 2, 3, 4, 5)	1	PES (1)
Laboratory blanks	MPs identified	MP polymer type
Site 1 Oct-19	0	-
Site 1 Nov	0	-
Site 1 Dec	0	-
Site 1 Jan	4	PP/ PE (1)
		PPA (1)
		PVP (2)
Site 1 Feb	0	-
Site 1 Mar	4	Co-polymer (1)
		Nylon (3)
Site 1 Apr	6	Nylon (1)
		PS (4)
		PP/ PE (1)
Site 1 May	1	Co-polymer (1)
Site 1 Jun	5	Co-polymer (1)
		PPA (1)
		PS (2)
		PVC (1)
Site 1 Jul	1	PP/ PE
Site 1 Aug	0	-
Site 1 Sep	0	-
Site 1 Oct-20	0	-
Site 2 Feb	0	-
Site 3 Feb	1	Nylon (1)
Site 4 Feb	0	-
Site 5 Feb	5	PES (1)
		PET (1)
		PP (2)
		TPE (1)