We thank the reviewer for their helpful and constructive comments. The reviewers comments are shown in black, our response in blue italics, and amendments to the text are in red.

Response to reviewer 1:

So far as I know (and I am not an expert) this is the first documentation of microplastics in Antarctic snow. As such it is a valuable paper that documents the ever growing reach of this pollutant.

Analysis of air borne microplastics is a relatively new field and one where protocols are still being developed. I am pleased to see that considerable thought has gone into the minimising of contamination in this study. The sampling and analysis protocols are thoroughly described and rigorous, providing confidence that the results of microplastic concentrations are accurate. The discussion of the potential sources is thoughtful and realistic. I have some specific comments below that might be considered before final publication about the analysis and the sources.

The analysis method (section 2.3) involves visual identification of the microplastics followed by FTIR characterisation. This visual approach must necessarily preclude some very small microplastic fragments, but there is no discussion of a lower size limit. The useful effort to check recovery focusses on particles of 500µm. In Figure 5 the lowest size range is 0-200 µm. Around line 240 there is discussion of the possible bias against detecting small particles in this work, but I would suggest that this be discussed in the methods section.

To address this, the following has been added at line 85:

"It is recognised that due to human error, inability to transfer some particles due to their small size and brittleness, and the translucent and transparent nature of some microplastics that there are limitations to this method which are hard to avoid. This may lead to the underestimation of microplastics in this study."

"The smallest particle identified in this study was 44 µm (non-plastic), meaning particles less than this size were not accounted for due to analysis limitations."

Table A2 describes the size of particles, but particularly for fibres with one long and another short axis, the issue of size is ambiguous and the caption of this table could be expanded to clarify this.

This may have been a misunderstanding; we state in the caption for Table A2 that: "'Size' indicates the width for fragments and length for fibres."

The discussion of sources is thoughtful and interesting, although necessarily inconclusive. As I understand it the remote sampling sites are generally south and west of the main nearby stations (Mcmurdo and Scott Figure 3) and the airflow was generally from the south and east (Figure 6). In line 357 I think the authors imply that air masses containing the sampled snow would have passed over "the bases" before reaching the deposition sites and in line 300 they suggest the bases are the main source. Their data shows higher microplastics closer to the bases, so there clearly is a source there, but I'm not sure that their data does imply the bases are the sources for the microplastics at the sampling sites further from the Scott and McMurdo stations. I would say you cannot conclude if the source is from there or from very long range transport, but maybe I am missing something in the argument.

We have reworded this sentence to address this issue on line 337 and line 397 respectively:

"Short-range transport of microplastics from the bases to ~~the~~ sampling sites close by (e.g. S14-S19) is more likely than long-range transport, given the sites' proximity to research bases and the climatology of the area. Yet sites further away may have more influence from long-range transportation, showing the potential influence of both short range and long range inputs."

"…it is likely that ~~the majority of identified~~local inputs were a contributor to the microplastic pollution identified. ~~microplastics originated from local inputs from surrounding research stations.~~"

We do know, as the authors document, that long range transport of other material than microplastics does occur to Antarctica, so this is clearly a potential source. In that context I did not really understand in line 203 what the authors mean by the residence time. I think their figure of 156 hours is the longest trajectory they considered. However, assuming that microplastics can remain suspended in the air (my understanding of the term residence time) for longer than that, they could have been derived from further afield, or indeed have been deposited and resuspended from land or the sea en route. I would suggest the argument here might be clarified.

These values have been taken from previously hypothesised residence times of airborne microplastics, as shown in the following paper: Brahney, J., Mahowald, N., Prank, M., Cornwell, G., Klimont, Z., Matsui, H. and Prather, K.A., 2021. Constraining the atmospheric limb of the plastic cycle. Proceedings of the National Academy of Sciences, 118(16).

At the first mention of residence time in line 209 we have added the following to expand on and clarify this:

"The residence time is the length of time that a particle can remain in the atmosphere which was estimated by Brahney et al. (2021) to be as long as 156 hours prior to deposition at the sampling site. We acknowledge that microplastics could be suspended in air for longer than the time periods used, although unlikely, and that they could have been derived from further afield or have been deposited and resuspended from land or the sea en route."

References

Brahney J, Mahowald N, Prank M, Cornwell G, Klimont Z, Matsui H, et al. Constraining the atmospheric limb of the plastic cycle. Proceedings of the National Academy of Sciences 2021; 118.

We thank the reviewer for their helpful and constructive comments, which we have addressed as described below. Their comments are shown in black, our response in blue italics, and amendments to the text are in red.

Response to Reviewer 2:

Overall this is a well written manuscript. However, there are some places where the results and methods can be more clearly presented. Additionally, the authors should more clearly state the limitations of their approach. Lastly, I cannot find any data availability statement. I recommend major revisions.

One aspect of the methods that was not clear to me is the calculation of microplastic count per liter. Was this from the total liquid volume? If so, the authors must provide that information and this should be stated in the methods (line 60). Additionally, I suggest the authors add a summary table summarizing how many plastic particles per sample were identified and the volume of water in the main text.

Yes, this was from the total liquid volume. This has now been added to the text at line 57 and a column added to table A3 with sample volume (please see addition to table at the end of document):

"Snow samples were thawed in the sealed sample bottles at room temperature for 24–48 hours prior to analysis. Thawed samples were filtered through a glass apparatus attached to a vacuum using a cellulose nitrate membrane filter (Whatman nitrocellulose membrane, 50 mm diameter, 0.45 µm pore size). The volume of liquid (melted snow) was recorded at this step, before rinsing, to establish the volume of each individual sample bottle. Approximately 10–20 mL of 70% ethanol was used to rinse the filters, and a further 10–30 mL of 96% ethanol was added to soak the filter for 10 minutes, to prevent bacterial and viral growth for further biosecurity measures. The sides of the glassware were thoroughly rinsed with ultra-pure water (<18 MΩ) to dislodge any microplastics adhered to the walls of the filtering equipment, and samples were dried under vacuum."

Blank corrections are really important here. On average, it appears that 6 particles were identified in the blanks. This seems to be greater than number of plastic particles measured in some samples (E.g. S2, S9). This should be clearly stated, and this highlights the importance of the approach used for blank corrections. There are many different approaches in the microplastics literature for handling blanks and for handling low sample counts (e.g., Bender et al., 2020 Applied Spectroscopy; Miller et al., 2021 Journal of Hazardous Material; Standard Operating Procedures for Extraction and Measurement by Infrared Spectroscopy of Microplastic Particles in Drinking Water by the California Water Board) including the method used here and using FTIR spectral matches. I suggest the authors include a citation for how they chose their approach. Additionally, the authors should provide some additional information such as how many particles from field and laboratory procedures were identified per sample and what the blank particles look like (color, size, morphology, spectra, etc).

Thank you for your comment. We followed the methodology highlighted in Brander et al. (2020) and used in Vandermeersch et al. (2015), whereby the number of particles matching the identical characteristics of those found in the blanks (field blank and laboratory blank samples) were omitted from further analysis and the total number of particles found in corresponding daily blank samples (with identical characteristics) were subtracted off the final results, to ensure a conservative approach. All fragments identified in field and laboratory blanks matched the colour and coating of the sampling bottles and were disregarded throughout the analysis. No fragments were found in the daily blanks, meaning fibres were the predominant morphotype.

We have added the following to line 123 and made the following changes to section 3.1, respectively, to highlight the approach taken for blank corrections:

Line 123: "For blank corrections we followed the methodology highlighted in Brander et al. (2020) and used in Vandermeersch et al. (2015), whereby particles matching the identical characteristics of those found in the blanks (laboratory and field blanks) were omitted from further analysis, and total daily laboratory blank findings were subtracted from the corresponding samples (Table. S1). Daily laboratory blanks were analyzed using the same procedure as all samples with 500 mL of ultra-pure water. The laboratory blanks were analyzed to compare results for each individual date and accounted for in the data for the samples filtered on the corresponding days. Particles found in field samples with identical characteristics to those found 130 in blanks were discarded and excluded from the results"

Section 3.1: "~~R~~Recovery rates for spiked samples were 100%. Across the sample controls an average of 1.5 (±0.89)~~one~~ particles were~~as~~ found in daily laboratory blanks (*n*=11), 3 (±0)~~three~~ particles in field blanks (*n*=2) and 2 (±1)~~two~~ particles in method controls (*n*=2). *All fragments identified in field and laboratory blanks matched the colour and coating of the sampling bottles. No fragments were found in the daily blanks, meaning fibres were the predominant morphotype (Table. S1).* Spectroscopic analysis confirmed that the outside bottle coating and fragments found in the blanks were polymethyl methacrylate (PMMA). Suspected microplastic particles in field samples of an identical colour and morphotype to those detected in the field and laboratory blanks were not analyzed further and discounted from the results. All reported PMMA still included in results was a different morphotype and colour to the corresponding sampling bottles, and therefore some PMMA is still shown in results. Particles with identical characteristics of those found in the field and laboratory blanks were excluded from further study and daily blank contamination was subtracted from the results of corresponding samples."

We have also moved the following lines from section 2.4.3 to the previous section, 2.4.2 so all information is in one place:

"Daily laboratory blanks were analyzed using the same procedure as all samples with 500 mL of ultra-pure water."

"The laboratory blanks were analyzed to compare results for each individual date and accounted for in the data for the samples filtered on the corresponding days."

"Particles found in field samples with identical characteristics to those found in blanks were discarded and excluded from the results."

Regarding the interpretation that there were 6 particles on average in the blanks. There were on average 1 in the daily blanks, 2 in the method controls and 3 in the field blanks, which we have chosen not to combine as they are all addressing contamination gained at different stages of the process, i.e. the method controls and field blanks were likely to also pick up contamination from the laboratory process, just as the daily blank did. The daily blanks corresponded with certain samples that were processed on different days, so these are unique to those samples (see added table at end of document). The standard deviations have also been added to the three values provided (see additions to section 3.1 above).

Additionally line 140 to 141 should include standard deviations of the blanks and the authors should include a table like A2 for the particles identified in the blanks which will also help the reader to understand lines 144 to 145. It appears that sample volume is a limitation here, as a greater sample volume would have resulted in particle counts that were greater than the blank values. This should be clearly stated and perhaps samples with low microplastic

counts should be clearly identified. I suggest the authors clearly state this limitation of the data set in the text and in the conclusion and make recommendations for future studies to collect a greater sample volume. For example, I suggest lines 213 to 215 should state “our work provides the first evidence of microplastics in Antarctic snow. limitations of this dataset include low sample volume and therefore should be replicated, however, our preliminary results suggest…” This low sample volume also explain why particles are higher than prior work.

The standard deviations have been added as shown above to edits made in section 3.1.

A table has been added to the supporting information with the blank particle characteristics, this can be found at the end of the document.

We agree with the reviewer that there are limitations experienced due to the low sample volume. This low sample volume was due to the import process of biological samples necessary from the Antarctic into New Zealand, with permits restricting the amount of liquid we were able to bring back. In response to this, we have added in further explanation of this:

Line 246: “This dataset is limited by the low sample volumes due to the permitting restrictions for Antarctic samples. Therefore, we recommend this study to be replicated to further understand these preliminary findings. Larger volumes of snow (≥10 L) or replicates from the same study sites would be beneficial for future research.”

While picking putative plastic particles is a good approach, it is important that the authors note that there is a limitation to this method. Specifically that it is really hard to detect translucent or transparent microplastics, and that it is really hard to pick small particles (which the authors noted), and many particles become brittle and difficult to transfer. I think it’s important to note these limitation, specifically in the discussion about the color.

To address this we have added in the following to section 2.3, Line 85:

“It is recognised that due to human error, inability to transfer some particles due to the small size and brittleness, and the translucent and transparent nature of some microplastics that there are limitations to this method which are hard to avoid. This may lead to the underestimation of microplastics in this study.”

Lastly, there is no data availability statement. Please see Cowger et al., 2020 Critical Review of Processing and Classification Techniques for Images and Spectra in Microplastic Research, Applied spectroscopy for a discussion on data sharing practices for microplastic data.

A data availability statement has now been added at the end of the paper on line 405:

“The microplastic data generated in this study has been provided in the appendix of this manuscript, including microplastic counts, sample volume, particle size, shape and polymer type. Relevant data to evaluate the conclusions of this paper are present in either the main paper, the appendix, or the supporting information provided.”

Minor comments:

Line 30: There is evidence that anthropogenic pollutants in ice core records from 1889 (e.g. McConnell et al., 2014, Scientific reports)

We have amended this statement on line 30:

"With a few exceptions, such as lead pollution in the late 19th century (McConnell et al., 2014), Antarctica was generally thought to be largely untouched by humans until the early 20th century due to its inaccessibility, extreme environmental conditions and barriers such as the Antarctic Circumpolar Current (Tin et al., 2014; Gordon, 1971). While the human footprint has increased over the last century, Antarctica ~~has been set aside as~~is still a place of peace and science and is thought of as the last remaining true wilderness on earth (Tin et al., 2016). Due to this, Antarctica can act as an indicator of physical, chemical, and biological effects caused from anthropogenic stresses (Huiskes et al., 2006)."

Line 52: was the funnel also stainless steel? And is there an approximate area of the surface snow that was sampled?

Yes, the funnel was stainless steel. We have added this to line 53. The area of surface snow was not measured so we have chosen not to include this.

"Samples were collected using a stainless-steel scoop and stainless-steel funnel to fill each 500 mL bottle with snow from the top 2 cm of the surface."

Section 2.2: Were the reagents used pre-filtered?

It was established that adding a step of filtering for reagents could increase the contamination levels by adding another step for sample exposure, so reagents were not pre-filtered, but all reagents used were analytical grade from previously unopened containers. Below statement added in at line 75:

"All reagents used were previously unopened and analytical grade, with blanks also undergoing identical analysis to control for contamination."

Line 56: were they kept covered during thawing?

Yes, added in line 57:

"Snow samples were thawed in the sealed sample bottles at room temperature for 24–48 hours prior to analysis."

Line 68: Was the magnetic stir bar coated in plastic?

Yes, this was accounted for, added text in line 70:

"The solution was then left, with the beaker opening covered in aluminium foil, for 20 minutes before being stirred on a hot plate at 45 ◦C for 2–3 hours with a magnetic stir bar. The magnetic stir bar had a white PTFE coating, which was not identified in any field or blank samples."

Line 70: Glass Fiber?

Added into line 74:

"…onto a Whatman glass fibre GF/C filter…"

Line 76: I would rewrite to say "Suspected microplastics were characterized…"

This has been edited at line 81:

"Suspected ~~M~~microplastics were characterized into four main morphotypes"

Line 85: What is the minimum size that the authors were able to pick?

Added to line 88:

"The smallest particle identified in this study was 44 µm (non-plastic), meaning particles less than this size were not accounted for due to analysis limitations."

Line 88 to 89: This is unclear to the reader. I suggest defining the acronyms.

These have been added to line 98:

(Databases: Industrial chemicals, pure organic compounds; organosilicons; polymers, Hummel defined basic; Sadtler acrylates & Methacrylates; Sadtler fibers & textile chemicals; Sadtler fibers by microscope; Sadtler inorganics; Sadtler polymers & monomers (comprehensive); saddler polymers, Hummel; Sadtler standards (organic & polymeric compounds subset); Sigma-Aldrich library of FT-IR spectra).

Line 90 to 91: Was there any smoothing, baseline correction, atmospheric suppression, etc conducted on the spectra?

Baseline correction was applied, and CO_2 spectral ranges excluded, this has been added line 97:

"All spectra were baseline corrected and CO_2 spectral ranged excluded, saved, and compared against the following~~a~~ Wiley spectral librariesy~~"~~

Line 90 to 91: For the spectra that did not match the library, can the authors provide some additional detail about the matching approach? Perhaps an example spectra and subsequent match would be helpful here.

We have added in the following reference at line 103 to explain the necessity of manual peak picking in environmental plastic studies when using spectral libraries:

"Those <70% that exhibited plastic characteristics from visual screening and possessed similar µFTIR spectra were analyzed further by the authors using peak picking tools to identify characteristic peaks of plastic polymer types (Kroon et al., 2018). Due to the environmental degradation sampled particles have been subjected to, and the limitations of spectral libraries due to the use of high standard polymers, visual inspection of spectra is an essential step in identification of environmental microplastic analysis (De Frond et al., 2021; Shim et al., 2017)~~.~~"

Line 96 to 97: What was the lid of the sample bottle made of?

This was clear silicone. Have added this information into line 171:

"The lining of the lids of the sampling bottles was confirmed as clear silicone, which was not found in any of the samples or blanks."

Line 156 to 157: Does this include the plastics with matches <70%?

Yes. This has been highlighted in section 2.3 and the following added into line 105 (also refer to above additions for this section):

"These particles matching characteristic spectral peaks were included in results."

Figure 4: I think the abbreviations used in the figure should be defined in the figure caption.

These definitions have been added into the caption of Figure 4.

"Figure 4. Polymer types identified across all samples. (a) Number of each polymer type found across all Antarctic study sites (PET: polyethylene terephthalate, CP: copolymers, PMMA: polymethyl methacrylate, PVC: polyvinyl chloride, PA: polyamide, other: (polytetrafluoroethylene (PTFE), polyvinylidene, polypropylene, silicone and polymethyl anhydride.), PE: polyethylene, ALK: alkyds, CN: cellulose nitrate); (b) Number of microplastic fragments and fibres identified in each colour category (films (*n*=1) excluded); (c) Size distribution of microplastics across all samples categorized by morphotype (length)."

Figure 5: I suggest combine with figure 4.

This has now been combined in the updated manuscript, with figure heading updated as shown in above comment.

Line 255 to 256: I suggest reminding the reader the minimum and max distances to these stations.

The following has been added to section 4.3.1 (line 288):

"Antarctic research stations on Ross Island, Scott Base (NZ) and McMurdo Station (US), ~~are within~~have the closest proximity to the sampling sites, up to 20 km away (Fig. 1), with Zucchelli Station (Italian) the next closest at 350 km away."

Section 4.3.1: Are tumble dryers used at the stations? If so, perhaps considering them as a potential source (see Tao et al., 2022, Microfibers Released into the Air from a Household Tumble Dryer, ES&T).

Yes, the following has been added to line 315 and 326, respectively:

"An excess of 700,000 synthetic fibres are released from an average 6 kg load of washing acrylic fibres (Napper and Thompson, 2016) and with tumble dryers being present these may also contribute to the presence of microplastics (Tao et al., 2022)."

"Future work should focus on quantifying the contribution of tumble dryers and wastewater discharge to the abundance of microplastics in Antarctica, as well as the most effective wastewater treatment process(es) for microplastic removal, which could ultimately be used at these bases."

Line 281 to 282: what are the WWT processes for the bases nearby the sampling sites?

We do not have enough information to make claims on this, but we have added the above statement on future work to line 326 to address this.

Table A2: Characteristics of microplastics identified. Volume is the melted snow content of each sample. As discussed in the text, ‘blue’ includes blue, black and navy. ‘Size’ indicates the width for fragments and length for fibres.

Sampling Site	Morphotype	Colour	Size	Polymer	Volume (mL)
S1	fibre	blue	630	Polyester	207
	fragment	blue	226.24	acrylic copolymer	
	fragment	pink	326.34	acrylic melamine copolymer	
	fibre	blue	318.31	acrylic epoxy resin copolymer	
S2	fibre	blue	540.86	Polyamide	250
S3	fibre	blue	1329.7	Polyamide	233
	fibre	blue	885.18	Polyester	
	fibre	clear	255.99	PMMA	
	fibre	blue	1033.72	Polyester	
	fibre	blue	499.85	Polyester	
	fibre	blue	699.56	Polyester	
	fibre	red	138.84	PA	
	fibre	clear	1519.3	PMMA	
S4	fibre	blue	272.57	polyvinyl acetate copolymer	192
	fibre	clear	457.24	Polyester	
	fragment	blue	166.24	PE	
	fragment	blue	167.65	silicone	
	fragment	pink	129.98	alkyds	
	fragment	blue	89.77	polyethylene	
	fragment	pink	220.84	polyethylene	
S5	fibre	blue	1224.39	Polyester	216
	fibre	blue	883.31	Polyester	
	fibre	blue	418.53	Polyester	
	fibre	blue	329.37	Polyester	
	fragment	pink	313.34	Polyester	
	fragment	pink	144.48	PMMA	
S6	fragment	pink	415.38	polypropylene	208
	fibre	pink	252.04	PMMA	
	fibre	blue	254.84	polyamide	

	fibre	clear	544.04	PMMA	
S7	fibre	blue	518.56	polyvinylidene	184
	fragment	pink	224.51	Polyester	
	fibre	blue	751.09	Polyester	
	fragment	pink	188.61	polyethylene	
	fibre	clear	550.18	polyester copolymer	
	fibre	blue	904.05	Polyester	
	fibre	pink	3510.5	polyamide	
	fibre	clear	1533.8	Polyester	
	fragment	blue	89.02	cellulose nitrate	
	fragment	pink	215.11	acrylate copolymer	
S8	fibre	blue	2452.53	Polyester	221
	fragment	blue	744.33	acrylic copolymer	
	fragment	blue	981.47	acrylic copolymer	
	fibre	blue	660.42	acrylic copolymer	
	fibre	pink	257.98	acrylic copolymer	
S9	Fragment	white	518.89	cellulose nitrate	203
S10	fibre	pink	184.84	polyamide	191
	fragment	blue	77	PMMA	
	fragment	blue	63	PMMA	
S11	Fibre	clear	395.78	Polyester	235
	fragment	purple	85.24	Polyester	
S12	fibre	clear	888.54	Polyester	226
	fibre	clear	497.85	PTFE	
S13	Fibre	Blue	616.95	polyamide copolymer	166
	Fibre	Blue	1387.64	cellulose nitrate	
	Fibre	Blue	729.62	polyamide	
	Fragment	pink	314.09	Polyester	
	fibre	pink	467.88	Polyester	
	fragment	pink	257.53	acrylic copolymer	
S14	Film	Blue	1497.11	Polyester	219
	Fragment	Green	199.48	alkyds	
	Fibre	Blue	1091.78	Polyester	
	fibre	blue	1452.55	Polyester	
	fibre	blue	1647.14	alkyds	

	fragment	pink	135.34	PMMA	
	fragment	blue	142.3	acrylic copolymer	
	fibre	pink	2002.91	Polyester	
	fibre	blue	1131.31	cellulose nitrate	
	fibre	clear	1851.13	Polyester	
S15	Fibre	clear	959.67	Polyester	217
	Fibre	blue	2005.45	PMMA	
	Fibre	pink	983.33	Polyester	
S16	fibre	pink	726.42	Polyester	146
	fibre	blue	1321.59	methyl vinyl ether/maleic anhydride copolymer	
	fibre	pink	415.09	Polyester	
	fragment	blue	208.09	PVC	
	fragment	green	179.78	alkyds	
	fibre	blue	721.63	Polyester	
	fibre	blue	200	Styrene copolymer	
	Fibre	Clear	300	Polyester	
	Fibre	Clear	1378.89	Polyester	
	Fibre	Clear	1461.7	Polyester	
	Fibre	Blue	420.63	poly(methacrylic anhydride)	
	Fragment	Bright green	346.03	acrylic copolymer	
S17	fibre	blue	400.2	Polyester	156
	fragment	bue	50.05	Polyester	
	fragment	blue	67.68	PMMA	
	fragment	grey	336.11	PTFE	
	fragment	grey	63.31	PTFE	
	fragment	green	120.75	acrylic copolymer	
S18	Fragment	Blue	109.57	PVC	160
	Fibre	Blue	1457.75	Polyester	
	Fibre	Clear	483.56	Polyester	
	Fibre	Blue and White	1327.49	Polyester	
	Fragment	Blue	123.2	PVC	
	Fibre	Pink	466.68	Polyester	
	Fibre	Blue	464.9	Polyester	
	Fibre	Blue	403.55	Polyester	

	Fragment	Blue	127.71	PVC	
S19	Fibre	Blue	461.68	Polyester	182
	Fibre	Blue	900.61	PVC	
	Fibre	Pink	238.21	Polyester	
	Fragment	Pink	170.81	Polyester	
	Fragment	Pink	117.6	PVC	
	Fragment	Blue	163.57	acrylic copolymer	
	Fragment	Blue	113.41	PVC	
	Fragment	Blue	116.39	PVC	
	Fibre	Blue	120.96	PVC	
	Fragment	Blue	165.47	PVC	

Supporting Information

Table S1. Blank findings from field blanks (FB), laboratory blanks (LB) and daily blanks (DB). Daily blank samples correspond to specific samples processed at the same time and therefore account for contamination of specific samples. Blank corrections were made by subtracting the corresponding daily blank findings from the results before reporting. Fragments were excluded from this table as they were only found in FB and LB, with all matching the colour coating of the sampling bottles.

Blanks (+ corresponding samples)	**Morphotype**	**Colour**	**Total**
FB1	Fibre	Black Clear Clear	3
FB2	Fibre	Black Blue Blue	3
LB1	Fibre	Blue	1
LB2	Fibre	Blue Clear Clear	3
DB1 (S1,S8)	Fibre	Clear Clear	2
DB2 (S2,S3)	Fibre	Clear Clear	2
DB3 (S6,S7)	Fibre	Blue Clear Clear	3
DB4 (S4, S15)	Fibre	Clear Clear	2
DB5 (S9, S11, S12)	Fibre	Blue Clear	2

DB6 (S5,S10)	Fibre	Black Clear	2
DB7 (S17)	None	-	0
DB8 (S13)	Fibre	Blue	1
DB9 (S14)	Fibre	Blue	1
DB10 (S16, S18)	None	-	0
DB11 (S19)	Fibre	Blue Clear	2

References

Brander SM, Renick VC, Foley MM, Steele C, Woo M, Lusher A, et al. Sampling and quality assurance and quality control: a guide for scientists investigating the occurrence of microplastics across matrices. Applied Spectroscopy 2020; 74: 1099-1125.

De Frond H, Rubinovitz R, Rochman CM. μATR-FTIR Spectral Libraries of Plastic Particles (FLOPP and FLOPP-e) for the Analysis of Microplastics. Analytical Chemistry 2021; 93: 15878-15885.

Kroon F, Motti C, Talbot S, Sobral P, Puotinen M. A workflow for improving estimates of microplastic contamination in marine waters: A case study from North-Western Australia. Environmental Pollution 2018; 238: 26-38.

McConnell JR, Maselli OJ, Sigl M, Vallelonga P, Neumann T, Anschütz H, et al. Antarctic-wide array of high-resolution ice core records reveals pervasive lead pollution began in 1889 and persists today. Scientific Reports 2014; 4: 1-5.

Shim WJ, Hong SH, Eo SE. Identification methods in microplastic analysis: a review. Analytical methods 2017; 9: 1384-1391.

Tao D, Zhang K, Xu S, Lin H, Liu Y, Kang J, et al. Microfibers Released into the Air from a Household Tumble Dryer. Environmental Science & Technology Letters 2022.

Vandermeersch G, Van Cauwenberghe L, Janssen CR, Marques A, Granby K, Fait G, et al. A critical view on microplastic quantification in aquatic organisms. Environmental Research 2015; 143: 46-55.