Supporting Information

Cloth-Air Partitioning of Neutral Per- and Polyfluoroalkyl Substances (PFAS) in North Carolina Homes during the Indoor PFAS Assessment (IPA) Campaign

Clara M. A. Eichler,[1] Naomi Y. Chang,[1] Elaine A. Cohen Hubal,[2] Daniel E. Amparo,[1] Jiaqi Zhou,[1] Jason D. Surratt,[1,3] Glenn C. Morrison,[1] and Barbara J. Turpin[1]*

[1] University of North Carolina at Chapel Hill, Gillings School of Global Public Health, Department of Environmental Sciences and Engineering, Chapel Hill, NC, USA

[2] U.S. EPA, Center for Public Health and Environmental Assessment, Research Triangle Park, NC, USA

[3] University of North Carolina at Chapel Hill, College of Arts and Sciences, Department of Chemistry, Chapel Hill, NC, USA

* Corresponding author: *bjturpin@email.unc.edu*

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Table S1: Samples collected during the IPA Campaign for (neutral and/or ionic) PFAS analysis

Indoor Environmental Media	Type of Sample	Approx. Number of Samples
Total air (gas + particle)	PUF-XAD2-PUF cartridges	21 (this study)
Gas phase	PUF-XAD2-PUF cartridges	25 (this study)
Airborne particles ($PM_{2.5}$)	Quartz-fiber filters (QFFs)	90
Airborne particles (Total suspended particles)	Quartz-fiber filters (QFFs)	25
Gas phase (cloth-air partitioning)	Suspended cotton cloth strips	72 (this study)
Cloth (cloth-cloth partitioning)	Folded cotton cloth pieces	146 (91 analyzed for this study)
Clothing/textiles	Cotton clothing items	11 (this study)
Airborne particles	Heating and air conditioning (HAC) filters	19
House dust	Vacuumed dust	21
House dust	Dust grab sample	20
Dryer lint trap	Dryer lint	27
Surface film	Window wipes	152
Surface film	Glass slabs, wall-mounted	378
Water	Tap water	60
Indoor moisture	HAC condensate	9

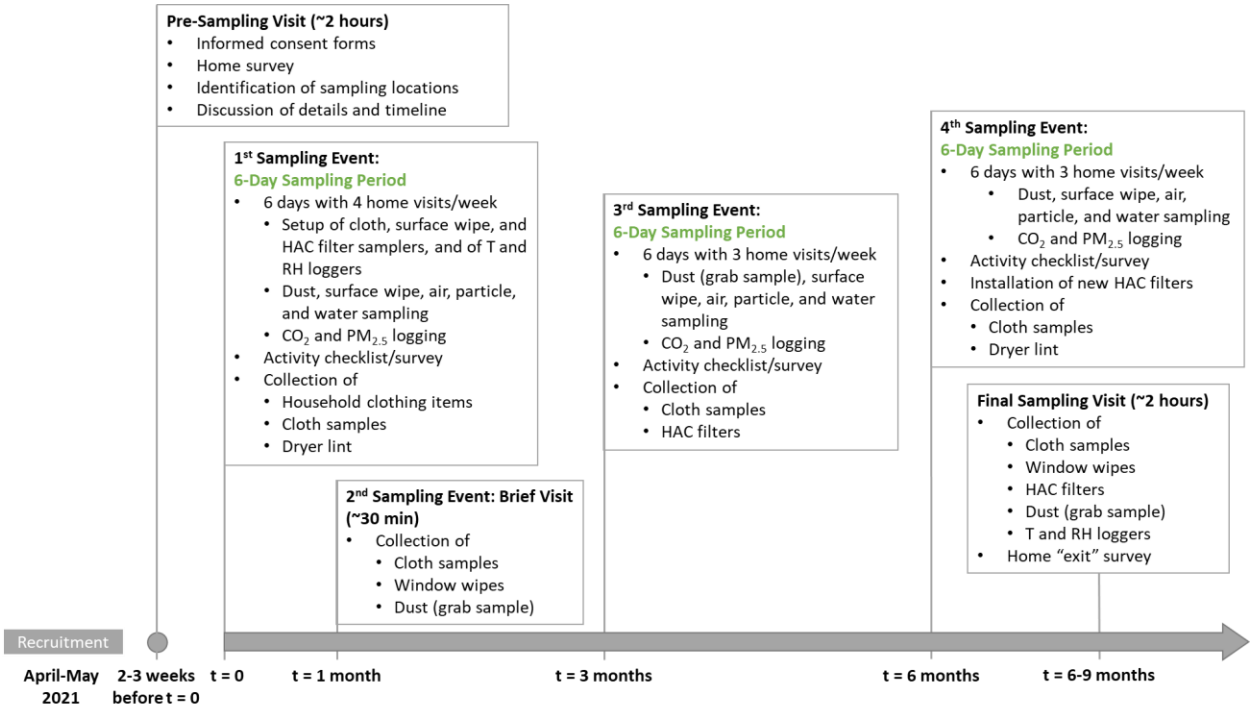

Figure S1: Sampling schedule for the IPA Campaign.

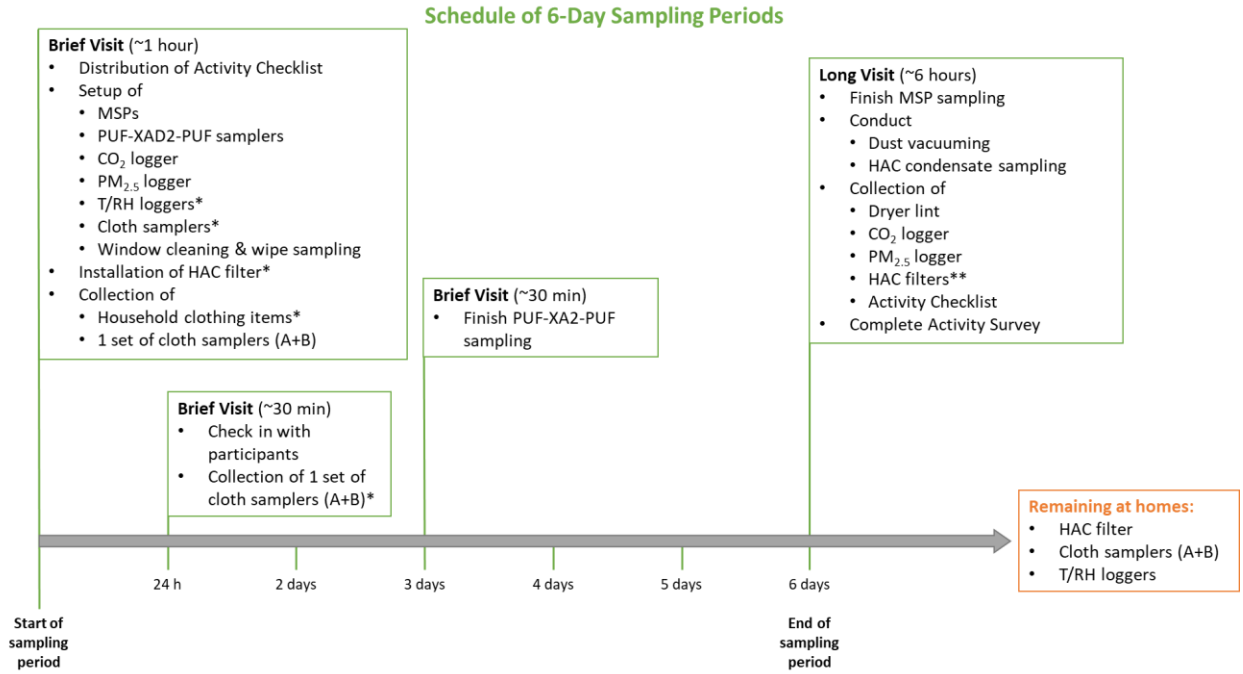

Figure S2: Schedule of the 6-day sampling visits, which occurred at t = 0, t = 3 months, and t = 6 months. *Event occurred only during the first sampling period, **event occurred only during the second and third sampling period.

1. Demographic Data			
Total number of occupants:	Number of occupants 0-14 years old:	Number of occupants 15-21 years old:	Number of occupants 21+ years old:

Are there any pets in the house?	Y N	
	If yes, do any go outdoors?	Y N Don't Know
	Are there any pet doors?	Y N Don't Know
	If there is a litter box indoors, what room is it located in?	

2. Cooking Appliances and Habits		
What type of stove do you have?	Gas Electric Coil Electric Smooth Top Induction Don't Know Other (specify): _____	
When was the stove bought?	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	
Do you have an exhaust fan above the stove?	Y N Don't Know	
	If yes, how frequently is it used?	Every time Most of the time Sometimes Never Certain conditions (expand):
	If yes, does it vent outside or inside, above the stove?	Outside Inside Don't Know
What type of cookware do you have?	Teflon-coated non-stick Ceramic-coated non-stick Unknown non-stick coated Other (specify): _____	
	Which type of cookware is used most frequently and around when was it purchased?	
How frequently is the oven used?	Daily Weekly Monthly Every couple of months Annually Don't Know NA	

	What type of pans/cookware are used in the oven?	Teflon-coated non-stick pans Ceramic/glass Other (specify): _____
How frequently is microwaved popcorn consumed in the home?	Weekly Monthly Every 3 – 6 months Annually Never	
	Type of popcorn: pre-packaged bag Bulk/Loose Other: _____	
How frequently are frozen, ready-made meals consumed?	Weekly Monthly Every 3 – 6 months Annually Never	
How frequently is takeout consumed in the home?	Weekly Monthly Every 3 – 6 months Annually Never	
Where do you get water for general household use?	Public or commercial water system. Name: _____ Private well Other (specify): _____ Don't Know	
Which water source is used most often for cooking?	Tap or faucet Bottled water Both, tap and bottled water Don't Know	
Do you treat or filter your water at home?	No Softener Charcoal Filter Reverse Osmosis Distilling Multi-stage filter Don't Know Other (specify): _____	
	Is this treatment:	For the entire house On the kitchen faucet Refrigerator Countertop Pitcher Other (specify): _____ Don't Know
	When do you use filtered water?	Drinking water Cooking Boiling water Brushing teeth Other (specify): _____ Don't Know
	How often is the water filter replaced?	0 – 3 months 4 – 6 months 7 – 12 months 1 – 5 years 5+ years Don't Know

	How old is the filter you're using right now?	1 month 1 – 6 months 7 – 12 months 1 – 5 years 5+ years Don't Know
3. Heating/Cooling Appliances and Habits		
How do you heat your home?	Natural gas Oil furnace Wood/pellet stove Electric/heat pump Don't Know Other (specify): _____	
Do you use a humidifier or dehumidifier?	Humidifier Dehumidifier Both Neither Don't Know	
	If yes, where is it/are they located?	
	If yes, how frequently is it used (e.g., constantly, sometimes, rarely, never)?	
	How often do you change the filter?	
Do you have a fireplace?	Y N Don't Know	
	What is burned in the fireplace?	Wood Artificial Logs Vented Gas Flame Don't Know Other, e.g., unvented gas or coal (specify): _____
	If yes, how frequently do you use it?	**Winter** Daily Weekly Monthly Never DK **Spring** Daily Weekly Monthly Never DK **Summer** Daily Weekly Monthly Never DK **Fall** Daily Weekly Monthly Never DK
Does this home have central heating and cooling (HAC)?	Y N Don't Know	
	If yes, do you know the make, model, and power	

	Humidifier	Dehumidifier
Winter		
Spring		
Summer		
Fall		

	rating of the HAC unit? *If participant agreed earlier, take a photo, including the tag on the side.* *<u>Name of photographer:</u>*	
	If yes, do you know the make and model of the thermostat? *If participant agreed earlier, take a photo.* *<u>Name of photographer:</u>*	
	If yes, how many HAC filters are installed in your home and where are they located?	
	If yes, what type of HAC filter is it, what are the dimensions, and how frequently is it replaced? *If participant agreed earlier, take a photo.* *<u>Name of photographer:</u>*	
	If no, what type of device is used?	
Approximately how often per season are windows in the following rooms open for more than 15 minutes?	Living Room	**Winter** Daily Weekly Monthly Never DK NA **Spring** Daily Weekly Monthly Never DK NA **Summer** Daily Weekly Monthly Never DK NA

		Fall Daily Weekly Monthly Never DK NA
	Kitchen	**Winter** Daily Weekly Monthly Never DK NA **Spring** Daily Weekly Monthly Never DK NA **Summer** Daily Weekly Monthly Never DK NA **Fall** Daily Weekly Monthly Never DK NA
	Bathroom	**Winter** Daily Weekly Monthly Never DK NA **Spring** Daily Weekly Monthly Never DK NA **Summer** Daily Weekly Monthly Never DK NA **Fall** Daily Weekly Monthly Never DK NA
	Master Bedroom	**Winter** Daily Weekly Monthly Never DK NA **Spring** Daily Weekly Monthly Never DK NA **Summer** Daily Weekly Monthly Never DK NA **Fall** Daily Weekly Monthly Never DK NA
	Other rooms in which sampling may take place: _____	**Winter** Daily Weekly Monthly Never DK NA **Spring** Daily Weekly Monthly Never DK NA **Summer** Daily Weekly Monthly Never DK NA **Fall** Daily Weekly Monthly Never DK NA
4. Home Characteristics		

About when was your home first built?	2015 – Present 2005 – 2014 1995 – 2004 1985 – 1994 1975 – 1984	1960 – 1974 1945 – 1959 1900 – 1944 Before 1900 Don't Know
When did you move into this house?	2015 – Present 2005 – 2014 2000 – 2004 1990 – 1999 1980 – 1989	1970 – 1979 1960 – 1969 1959 or earlier Don't Know
What type of home is this?	Apartment Townhouse Detached Condo Other: _____	
How many stories are in this building? (count only floors with finished rooms for living purposes or finished basement)		
On which floor do you spend most of your waking time?	Basement 1st floor 2nd floor Attic Other Don't Know	
In the past year has there been a major renovation to this house or apartment, such as adding a room, putting up or taking down a wall, replacing windows, or refinishing floors? When was the last one?	Yes, when was the last one?	
	Yes, I don't know when	
	Not renovated Don't Know	
In the past year was the inside of this house or apartment painted?		Date: No. of Rooms:
	Yes, it was painted on	

<table>
<tr><td rowspan="3">When was the last one? On how many rooms?</td><td>Yes, it was painted but I don’t know when</td><td></td><td></td></tr>
<tr><td colspan="3">Not painted Don’t Know</td></tr>
<tr><td>If yes, which room was painted and what was the approximate surface area painted?

*If participant doesn’t know SA, ask if you can go to room to estimate it</td><td colspan="3"></td></tr>
<tr><td rowspan="3">Please indicate all rooms that have carpets or rugs along with when they were installed in the home and whether they are stain/water repellant.</td><td>Room</td><td>Installed</td><td>Stain-/Water-repellant?</td></tr>
<tr><td>Living Room</td><td>Before 2000
2000 – 2009
2010 – 2014
2015 – 2020
in 2021
Don’t Know</td><td>Yes No Don’t Know</td></tr>
<tr><td>Kitchen</td><td>Before 2000
2000 – 2009
2010 – 2014
2015 – 2020
in 2021
Don’t Know</td><td>Yes No Don’t Know</td></tr>
</table>

	Bathroom	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	Yes No Don't Know
	Master Bedroom	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	Yes No Don't Know
	Room: _____	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	Yes No Don't Know
	Room: _____	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	Yes No Don't Know
	Yes No Don't Know		

Were any carpets or rugs removed from the home since you've lived here?	If yes, how old was the carpet/rug that was removed?	Before 2000	2000 – 2009	2010 – 2014 2015 – 2020 in 2021 Don't Know
	When was the carpet or rug removed?	Before 2000	2000 – 2009	2010 – 2014 2015 – 2020 in 2021 Don't Know
Has any furniture been treated with stain- or water-repellant chemicals since you bought it?	Yes No Don't Know			
	If yes, when was the furniture installed?	Before 2000	2000 – 2009	2010 – 2014 2015 – 2020 in 2021 Don't Know
	If yes, when was it last treated?	Before 2000	2000 – 2009	2010 – 2014 2015 – 2020 in 2021 Don't Know
	What room is the stain or water-repellant treated item located?			
	What product was used?	Scotchgard Rust-Oleum NeverWet 303 Fabric Guard Other (specify): _____		
Within the last six months were rugs, drapes, or furniture professionally cleaned? Inside the house? When? What items?		Date:	No. of Items:	
	Yes, cleaned on			
	Yes, but don't know when			
	No professional cleaning Don't Know			
	Yes No Don't Know			

Has any non-carpet flooring been installed since you've lived in the home?	If yes, what type?	Hardwood Vinyl Laminate Linoleum Ceramic/tile Engineered wood Other: _____ Don't Know	
	When was it installed?	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	
	Where was the flooring installed?		
	Approximately what size (area) of flooring was installed?	<100 sq ft 100 – 200 sq ft 200 – 300 sq ft >300 sq ft Don't Know	
When was the floor in the main living area last refinished?	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know		
Was your home furnished when you moved in?	Yes No Don't Know		
	If yes, do you know anything about the age/history of the furniture?		
	If no, what large pieces of furniture did you install and when were they installed?	Couch	
		Dining Room Set	
		Cabinets	
		TV/TV Furniture	
		Beds/Mattresses	
		Chairs	
		Tables	
		Countertops	
	If no, was any of it stain or water-repellant when you purchased it?	Yes No Don't Know	
5. Cleaning Habits			

Is there a washing machine and/or dryer in the home?	Yes No Don't Know		
	If yes, how frequently is laundry done?	Every few days Weekly Every few weeks Monthly Other: _____	
	If yes, what type of detergent, fabric softener, and/or dryer sheets are used (indicate "NA" if not used)? *If participant agreed earlier, take a photo. Name of photographer:*	Detergent	
		Fabric Softener	
		Dryer Sheets	
	If yes, how often is the dryer used?	All loads of laundry Most loads of laundry Few loads of laundry Never Don't Know	
	How often is dryer lint removed from the dryer filter?	After every load After 2 – 5 loads After more than 5 loads Never Don't Know	
How often and how do you clean the:	Living Room	Vacuum	Daily Weekly Monthly DK NA Other (specify): _____
		Dust	Daily Weekly Monthly DK NA Other (specify): _____
		Sweep	Daily Weekly Monthly DK NA Other (specify): _____
		Mop	Daily Weekly Monthly DK NA Other (specify): _____

		Wipe Surfaces	Daily Weekly Monthly DK NA Other (specify): _____
	Kitchen	Vacuum	Daily Weekly Monthly DK NA Other (specify): _____
		Dust	Daily Weekly Monthly DK NA Other (specify): _____
		Sweep	Daily Weekly Monthly DK NA Other (specify): _____
		Mop	Daily Weekly Monthly DK NA Other (specify): _____
		Wipe Surfaces	Daily Weekly Monthly DK NA Other (specify): _____
	Master Bedroom	Vacuum	Daily Weekly Monthly DK NA Other (specify): _____
		Dust	Daily Weekly Monthly DK NA Other (specify): _____
		Sweep	Daily Weekly Monthly DK NA Other (specify): _____
		Mop	Daily Weekly Monthly DK NA Other (specify): _____
		Wipe Surfaces	Daily Weekly Monthly DK NA Other (specify): _____

	Bathroom	Vacuum	Daily Weekly Monthly DK NA Other (specify): _____
		Dust	Daily Weekly Monthly DK NA Other (specify): _____
		Sweep	Daily Weekly Monthly DK NA Other (specify): _____
		Mop	Daily Weekly Monthly DK NA Other (specify): _____
		Wipe Surfaces	Daily Weekly Monthly DK NA Other (specify): _____
	Other Rooms: _____	Vacuum	Daily Weekly Monthly DK NA Other (specify): _____
		Dust	Daily Weekly Monthly DK NA Other (specify): _____
		Sweep	Daily Weekly Monthly DK NA Other (specify): _____
		Mop	Daily Weekly Monthly DK NA Other (specify): _____
		Wipe Surfaces	Daily Weekly Monthly DK NA Other (specify): _____
What types of cleaning agents do you use to clean each room	Living Room		

(indicate "NA" if none used)? *If participant agreed earlier, take a photo.* *Name of photographer:*	Kitchen			
	Bedroom(s)			
	Bathroom			
Do you use any air purifiers such as HEPA filters, ozone generators, or ionizers?	Y N Don't Know			
	If yes, what type(s) and where?	HEPA filter Ozone generator Ionizer Other: _____ Don't Know		
Are you aware of any mold or mildew in the home?	Y N Don't Know			
	If yes, where?			
6. Personal Care Products and Activities				
Does anyone in the home paint their nails?	Y N Don't Know			
	If yes, how often does someone in the home paint their nails?	Weekly Monthly Every few months Annually Don't Know		
	If yes, where are nails painted?	Living Room Kitchen Bedroom Bathroom Other: _____ Don't Know		
Does anyone in the home use hair spray?	Y N Don't Know			
	If yes, how many people and with what frequency?	No. of People:	Overall Frequency:	
			Daily Weekly Monthly Rarely Don't Know	
Does anyone in the home use any hair straightening or hair curling products? *If participant agreed earlier, take a photo.* *Name of photographer:*	Y N Don't Know			
	If yes, what type of product is used?			
	If yes, how many people and with what frequency?	No. of People:	Overall Frequency:	
			Daily Weekly Monthly Rarely Don't Know	
What shampoo, conditioner, and/or		Brand:	No. of People:	Overall Frequency:

other hair products are used? *If participant agreed earlier, take a photo.* *Name of photographer:*	Shampoo 1			Daily Weekly Monthly Rarely Don't Know NA
	Shampoo 2			Daily Weekly Monthly Rarely Don't Know NA
	Conditioner 1			Daily Weekly Monthly Rarely Don't Know NA
	Conditioner 2			Daily Weekly Monthly Rarely Don't Know NA
	Other: _____ _____ ____			Daily Weekly Monthly Rarely Don't Know NA
	Other: _____ _____ ____			Daily Weekly Monthly Rarely Don't Know NA

7. General Household Activities

Are candles, incense, and/or air fresheners used in the home?	Y N Don't Know		
	If yes, what type(s)?	Candles Incense Air freshener Other: _____	
	If yes, how frequently and which rooms are they used in?	Room:	Frequency:
		Living Room	Daily Weekly Monthly Rarely Don't know
		Kitchen	Daily Weekly Monthly Rarely Don't know
		Master Bedroom	Daily Weekly Monthly Rarely Don't know
		Bathroom	Daily Weekly Monthly Rarely Don't know
		Other: _____	Daily Weekly Monthly Rarely Don't know
		Other: _____	Daily Weekly Monthly Rarely Don't know

Has anyone smoked in the house in the past year? This includes cigarettes, hookah, e-cigs, and others.	Yes No Don't Know				
	If yes, how often does smoking occur and when was the last time someone smoked in the home?	Daily Weekly Monthly Rarely Don't know			
Do you have any "crafting" activities that release "smelly" compounds such as painting, varnishing, wood working, and kids' crafts, etc.?	Painting Wood working Kids' Crafts Miniature Models Other: _____ Don't know NA				
	If applicable, when was the last time they were done?	Activity:	Last Done:	Frequency:	Location/Notes:
		Painting			
		Wood working			
		Kids' Crafts			
		Miniature Models e.g., model airplanes, boats, etc.			
		Other: _____			
		Other: _____			
Are there any large electronic appliances in the house? Examples: printers, computer monitors, TVs, desktop computer, etc...	Yes No				
	If yes, what appliances are they?				
	How often are these appliances used?	Device:	Frequency:		
		Printer	Daily Weekly Monthly Rarely DK NA		
		Monitor	Daily Weekly Monthly Rarely DK NA		
		Desktop PC	Daily Weekly Monthly Rarely DK NA		
		TV	Daily Weekly Monthly Rarely DK NA		
			Daily Weekly Monthly Rarely DK NA		
	Which of these appliances are located in sampling areas: living room, kitchen,	Device:	Location or NA:		
		Printer			
		Monitor			
		Desktop PC			
		TV			

<table>
<tr><td></td><td>bathroom, bedroom?</td><td colspan="2"></td></tr>
<tr><td rowspan="11">Have you or a professional used any pesticides, termiticides, or insecticides in the past year in the home?</td><td colspan="3">Yes No Don’t Know

Professional Personal</td></tr>
<tr><td>If yes, what type and brand of pesticide/ insecticide was used?

If participant agreed earlier, take a photo. <u>Name of photographer:</u></td><td colspan="2">Spray Traps/Bait

Brand: _____</td></tr>
<tr><td>Where were insecticides/ pesticides used?</td><td colspan="2">Indoors Outdoors Don’t Know

Location/Room: _____</td></tr>
<tr><td rowspan="5">If traps/baits, what frequency are they replaced during the seasons?</td><td>Season:</td><td>Frequency:</td></tr>
<tr><td>Winter</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>Spring</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>Summer</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>Fall</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>If a professional sprayed the home, when was the last occurrence?</td><td colspan="2">Before 2000 2000 – 2009 2010 – 2014
2015 – 2020 in 2021 Don’t Know</td></tr>
<tr><td rowspan="4">If the home was personally sprayed, when was the last occurrence and with what frequency?</td><td>Season</td><td>Frequency</td></tr>
<tr><td>Winter</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>Spring</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
<tr><td>Summer</td><td>Never Monthly Once/season
DK Other: _____</td></tr>
</table>

		Fall	Never Monthly Once/season DK Other: _____
Is there any water-resistant/repellant clothing/gear (e.g., tents, backpacks, boots, sporting goods, ski, ski wax, impregnating spray) in the home or attached garage?	Yes No Don't Know		
	If yes, what clothing/gear, how many articles, and where are they stored?		
8. Cotton Clothing Item for Extraction			
You were asked to identify one 100% cotton clothing item that you no longer need. Which type of clothing did you choose (e.g., t-shirt, shorts, pajamas, etc.)?			
When did you purchase it (estimate)?			
For how long has it been stored and how (estimate time since last laundry without wearing)?			
Do you agree to leave the item stored where it is until we start sampling?	Yes No		
Do you agree to give the item to us at the beginning of the sampling campaign for extraction for PFAS?	Yes No		
Please note any other activity involving products that may contain PFAS chemicals or that may have affected your indoor air quality in the home in the past seven days.			

Figure S3: Home Survey, conducted before sampling started.

1. Demographic Data		
Has anyone moved into or out of the home since the beginning of the sampling campaign 6 to 9 months ago?	Y N Don't Know	
	If yes, please provide their age(s) and the date(s) they moved in.	
Have there been any changes to the number and types of pets in the home?	Y N NA	
	If yes, provide the details of the changes.	
2. Cooking Appliances and Habits		
Have any changes to the stove/exhaust fan in the home occurred?	Y N Don't Know	
	If yes, what changes have occurred?	
Have you purchased any new cookware since the sampling began?	Y N Don't Know	
	If yes, what types, how many, and when did you purchase them?	
3. Heating/Cooling Appliances and Habits		
Have you changed how you heat/cool/ventilate your home since the sampling began?	Y N Don't Know	
	If yes, please describe the changes and when they took place.	
Approximately how often per season do you have your window open for more than 15 minutes?	**Winter** Daily Weekly Monthly Never Don't Know **Spring** Daily Weekly Monthly Never Don't Know **Summer** Daily Weekly Monthly Never Don't Know **Fall** Daily Weekly Monthly Never Don't Know	
4. Home Characteristics		
In the past 9 months, has there been a major renovation to	Yes, when was the last one?	

this house or apartment, such as adding a room, putting up or taking down a wall, replacing windows, or refinishing floors? When was the last one?	Yes, don't know when No Renovation Don't Know		
In the past year was the inside of this house or apartment painted? When was the last one? On how many rooms?		Date:	No. of Rooms:
	Yes, it was painted on		
	Yes, it was painted but I don't know when		
	Not Painted Don't Know		
	If yes, which room was painted and what was the approximate surface area (SA) painted? **If participant doesn't know SA, ask if you can go to room to estimate it*		
Were any carpets or rugs removed from the home since the start of the sampling campaign 6 to 9 months ago?	Yes No Don't Know		
	If yes, how old was the carpet/rug that was removed?	Before 2000 2000 – 2009 2010 – 2014 2015 – 2020 in 2021 Don't Know	
	When was the carpet or rug removed?		
Has new carpeting or rugs been installed since the start of the sampling campaign, 6 to 9 months ago?		Date:	No. of Rooms
	Yes, it was carpeted on		
	Yes, it was installed but don't know when		
	No new carpets or rugs were installed Don't Know		

Since the start of the sampling campaign, 6 to 9 months ago, were rugs, drapes, or furniture professionally cleaned? Inside the house? When? What items?		Date:	No. of Items
	Yes, cleaned on		
	Yes, but don't know when		
	No professional cleaning Don't Know		
Has any non-carpet flooring been installed since the start of the sampling campaign, 6 to 9 months ago?	Yes No Don't Know		
	If yes, what type?	Hardwood Vinyl Laminate Linoleum Ceramic/tile Engineered wood Other: _____ Don't Know	
	When was it installed?		
	Where was the flooring installed?		
	Approximately what size (area) of flooring was installed?	<100 sq ft 100 – 200 sq ft 200 – 300 sq ft >300 sq ft Don't Know	
Has any furniture been treated with stain- or water-repellant chemical since the start of this sampling campaign, 6 to 9 months ago?	Y N Don't know		
	If yes, when was it last treated?		
	If yes, what room is it located in?		
	What product was used?	Scotchgard Rust-Oleum NeverWet 303 Fabric Guard Other (specify): _____	
Has any furniture or large household	Yes No Don't Know		

appliances been purchased and installed in the home since the start of the sampling campaign, 6 to 9 months ago?	If yes, when was the item brought into the home?	
	If yes, where is this item located?	
	If yes, was this item treated with a water- or stain-repellant coating?	Yes No Don't Know
Have you or a professional used any pesticides, termiticides, or insecticides since the start of the sampling campaign, 6 to 9 months ago?	Yes, professional Yes, personal No Don't Know	
	If yes, when?	
	If yes, what type and brand of pesticide/insecticide was used?	Spray Traps/Bait Don't Know Brand: _____
	If yes, where were pesticides/insecticides used?	Indoors Outdoors Don't know Location/Room: _____
5. Cleaning Habits		
Have any changes occurred to the washing machine/dryer since the beginning of the sampling campaign?	Y N Don't Know	
	If yes, please describe the changes	
Have the types of laundry detergent, fabric softener, and/or dryer sheets changed since the beginning of the sampling campaign?	Y N Don't Know	
	If yes, please describe what changed	
Have you changed the types of cleaning agents used to clean each room?	Y N Don't Know	
	If yes, please list the changes and which rooms they apply to	
Have you purchased an air purifier such as HEPA filters, ozone generators, or ionizers since the beginning of the sampling	Y N Don't Know	
	If yes, please list the type and where they're located	

campaign, 6- to 9-months ago?		
Have you become aware of any mold/mildew in the home since the start of the sampling campaign, in the past 6 to 9 months?	Y N Don't Know	
	If yes, where?	
Have you done any intensive, infrequent cleaning (like "Spring Cleaning") since the start of the sampling campaign, 6 to 9 months ago?	Y N Don't Know	
	If yes, where, when, and with what products?	
6. General Household Activities		
Have you hosted any large gatherings since the start of the sampling campaign?	Y N Don't Know	
	If yes, please describe each event. Number of people, special activities, duration, when, etc.	
Have you purchased any water-resistant/repellant clothing/gear since the start of the sampling campaign?	Y N Don't Know	
	If yes, please describe what and where they are stored.	
Have you or anyone in the home started a new crafting hobby that may impact indoor air quality since the start of the sampling campaign, 6 to 9 months ago?	Y N Don't Know	
	If yes, please describe the activity and when it began	
Is there anything else that you think might be good for us to know regarding potential impacts on your indoor air quality and sources of PFAS compounds in your home?		

Figure S4: Home Exit Survey, administered at the end of the last sampling visit.

Day/Date	How often did someone use one of the following appliances? **Please mark each use with an "x".*	For how long were the windows open? **Please circle.*	Was the heating and cooling (HAC) system or fan run? **Please circle the HAC setting and the fan mode.*	Was the home ever unoccupied? At what times? **If yes, please note the approx. time span. If no, please circle "No". Please also note the max. and min. number of people that occupied the home.*	Did someone clean in the following room(s)? **Please circle "V" for vacuum, "S" for swept, "D" for dusted, "W" for wiped surfaces, "M" for mopped, "CA" for cleaning agents, or "NA" if no cleaning occurred.*	Did someone do laundry? **Please mark with an "x" for each time the following laundry activities were done or circle "NA" if no laundry activity occurred.*
Day 1	Stove: Oven: Microwave: Toaster: Water kettle: NA	Never open < 1 hr 1 – 3 hrs 3 – 6 hrs 6+ hrs Open all day Don't Know	HAC setting: Auto Heating Cooling Off Don't know Fan setting: Auto On Off Don't know	Yes, at these times: No Don't Know Min. number of people in home: Max. number of people in home:	Living Room: V S D W M CA NA Kitchen: V S D W M CA NA Bathroom: V S D W M CA NA Bedroom: V S D W M CA NA Other Room(s): V S D W M CA NA	Washing Machine: Fabric Softener: Dryer: Dryer Sheets: Dryer Lint Sampled: NA
	Comments:					

Figure S5: Activity Checklist, one page for every day of each 6-day sampling period.

Cooking Activity	Responses
What types of cookware did you and others use during the sampling week? (circle all used)	Teflon-coated Non-stick Pans Other Non-stick Pans Other (stainless steel, cast iron, etc...): _____ None Don't Know
During the sampling week, how many times was microwaved popcorn made?	Never 1 – 2 3 – 6 7+ Don't Know
During the sampling week, how many times did you or others in the home make any ready-made frozen meals like pizza or microwaveable meals?	Never 1 – 6 7 – 13 14 – 20 21+ Don't Know
Was the cooking activity in the home during the sampling week typical? If no, please indicate what deviations occurred.	Yes, typical No, not typical – deviations: _____ _____ Don't Know
During the sampling week, how many times did you or someone in the house bring takeout food home?	Never 1 – 6 7 – 13 14 – 20 21+ Don't Know
What types of food packaging did the food come in? (circle all that apply)	Styrofoam Paper Take-Out Boxes Compostable Containers Foil Containers Plastic Container Pizza Box Other: _____ Don't Know

Cleaning Activity	Responses	
This question is about the cleaning products and types of cleaning you did during the sampling week. For each room, please tell me if you: vacuumed, dusted, mopped, swept, wiped surfaces, or cleaned the	<u>Living Room:</u>	Vacuum Dust Mop Sweep Wipe Surfaces Don't Know None Cleaning Agents: _____ _____

oven as well as what cleaning agents you used. *If participant agreed earlier, take a photo.* *Name of photographer:* _____	<u>Kitchen:</u>	Vacuum Dust Mop Sweep Wipe Surfaces Cleaning Oven Don't Know None Cleaning Agents: - _____ _____
	<u>Bathroom:</u>	Vacuum Dust Mop Sweep Wipe Surfaces Don't Know None Cleaning Agents: - _____ _____
	<u>Master Bedroom:</u>	Vacuum Dust Mop Sweep Wipe Surfaces Don't Know None Cleaning Agents: - _____ _____
	<u>Other Room(s):</u> _____ _ _____ _	Vacuum Dust Mop Sweep Wipe Surfaces Don't Know None Cleaning Agents: - _____ _____
Was the cleaning activity in the home during the sampling week typical? If no, please note what deviations (products, frequency, etc.) occurred and in which locations.	Yes, typical No, not typical – deviations: _____ _____ Don't Know	

Figure S6: Activity Survey, conducted at the end of each 6-day sampling period.

Table S2: Characteristics of homes participating in the IPA Campaign and associated indoor environmental conditions during the field sampling. The campaign started in July 2021 and ended in May 2022

Home ID	Duration of participation (months)	Start month-end month	Year built	Number of occu-pants	Number of pets	Home size (m^2)	Home volume, estimate (m^3)	Number of finished floors[a]	Flooring type in main living area[b]	Attached garage	Cloth sampling floor	Indoor T mean, range (°C)[c]	Indoor RH mean, range (%)[c]	Outdoor T mean, range, (°C)[d]	Outdoor RH mean, range, (%)[d]	Indoor CO_2 mean, range (ppm)[e]	ACH, estimate mean ± std. dev. (h^{-1})[f]
65	9.1	Jul - Apr	1987	3	1	169.8	411	2	Hardwood, rugs	y	2nd	21.0, [15.1-27.0]	53.2, [19.0-84.6]	15.4, [-9.0-38.0]	70.3, [14.3-100]	504, [355-870]	0.25 ± 0.05
18	9.2	Jul - Apr	1993	2	3	242.5	669	2	Carpet, linoleum	y	2nd	20.4, [13.7-25.6]	49.5, [29.0-73.5]	15.3, [-9.0-38.0]	69.7, [14.3-100]	624, [425-1704]	0.47 ± 0.31
78	7.5	Jul - Mar	1945	2	2	68.7	162	1	Vinyl, rugs	n	1st	20.5, [16.5-24.3]	52.1, [29.6-82.5]	15.1, [-9.0-38.0]	71.3, [16.3-100]	1086, [500-2311]	0.40 ± 0.25
30	6.7	Jul-Feb	1962	2	1	120.0	295	1	Hardwood, rugs	n	1st	21.6, [16.1-27.5]	57.2, [23.1-86.4]	15.2, [-9.0-38.0]	71.9, [20.7-100]	622, [378-971]	0.44 ± 0.05
82[g]	1.0	Aug-Sep	2017	1	1	152.5	420	2	Laminate, rugs	y	2nd	24.8, [21.3-26.7]	56.6, [49.1-75.8]	26.0, [12.0-38.0]	77.9, [30.1-100]	593, [481-815]	0.77[g]
50	9.1	Aug-May	1954	2	2	108.1	268	1	Hardwood, rugs	n	1st	20.7, [14.3-28.6]	55, [31.4-82.0]	14.5, [-9.0-38.0]	68.5, [14.3-100]	678, [426-2122]	0.38 ± 0.04
43	8.9	Aug-May	1920	2	1	117.1	286	1	Laminate, rugs	n	1st	21.7, [15.0-25.7]	55, [22.7-82.0]	14.1, [-9.0-36.0]	68.3, [14.3-100]	1025, [407-2552]	0.19 ± 0.06
35	7.3	Aug-Mar	1920	2	0	111.6	269	1	Laminate, rugs	n	1st	22.4, [10-7-31.7]	47.5, [21.8-71.9]	13.2, [-9.0-36.0]	68.8, [14.3-100]	746, [400-1595]	0.58 ± 0.25
10	8.5	Sep-May	1985	2	0	137.1	332	2	Bamboo, rugs	y	2nd	19.6, [10.8-27.0]	55, [18.1-81.0]	13.4, [-9.0-34.0]	67.6, [14.3-100]	667, [383-1840]	0.50 ± 0.15
59	8.1	Sep-May	2002	4	0	161.8	440	2	Hardwood, rugs	n	2nd	21.1, [9.6-27.5]	53.1, [28.8-82.1]	13.0, [-9.0-33.0]	67.5, [14.3-100]	1126, [698-2085]	0.24 ± 0.04
01	6.7	Nov-May	1999	1	2	174.1	481	2	Hardwood, rugs	n	2nd	21.2, [17.9-26.2]	39.9, [20.8-67.7]	11.6, [-9.0-36.0]	64.5, [14.3-100]	574, [419-1067]	0.21 ± 0.02

[a] Excluding unfinished attics or basements

[b] "Main living area" usually refers to the living room; for homes with open floor plans, the kitchen and/or dining areas were included as well

[c] Temperature (T) and relative humidity (RH) data based on continuous measurements during field campaign

[d] Based on KRDU weather station data

[e] CO_2 data collected only during the 6-day sampling periods

[f] Air exchange rate (ACH) calculation based on CO_2 data as described in Bekö et al.[1]

[g] Home 82 withdrew from the study after one month

Table S3: Window opening behavior of participants during the 6-day sampling periods

Home ID	Sampling period	Sampling month	Number of times a window was open for >15 minutes during the 6-day sampling period
65	t = 0	July	6
	t = 3 months	October	7
	t = 6 months	January	7
18	t = 0	July	0
	t = 3 months	October	0
	t = 6 months	January	0
78	t = 0	July	0
	t = 3 months	October	0
	t = 6 months	January	0
30	t = 0	July	0
	t = 3 months	October	10
	t = 6 months	February	4
82	t = 0	August	4
	t = 3 months	NA	NA
	t = 6 months	NA	NA
50	t = 0	August	5
	t = 3 months	November	6
	t = 6 months	January	0
43	t = 0	August	0
	t = 3 months	November	2
	t = 6 months	February	7
35	t = 0	August	1
	t = 3 months	November	7
	t = 6 months	February	9
10	t = 0	September	14
	t = 3 months	December	4
	t = 6 months	February	10
59	t = 0	September	0
	t = 3 months	December	0
	t = 6 months	March	4
01	t = 0	November	1
	t = 3 months	January	0
	t = 6 months	May	9

Table S4: PFAS analytes and mass-labeled standards, including CAS RNs, short names, and vendors

	Full name	CAS RN	Short name	Vendor	Catalog #	Associated mass-labeled standard
Analytes	2-(Perfluorohexyl)ethanol	647-42-7	6:2 FTOH	Sigma Aldrich	370533	13C-6:2 FTOH
	2-(Perfluorooctyl)ethanol	678-39-7	8:2 FTOH	Sigma Aldrich	532789	13C-8:2 FTOH
	2-(Perfluorodecyl)ethanol	865-86-1	10:2 FTOH	Wellington Labs	FDET	13C-10:2 FTOH
	2-(Perfluorooctyl)ethyl acrylate	27905-45-9	8:2 FTAC	Wellington Labs	8:2FTAcr	13C-8:2 FTOH
	2-(Perfluorodecyl)ethyl acrylate	17741-60-5	10:2 FTAC	Wellington Labs	10:2FTAcr	13C-10:2 FTOH
	N-Methylperfluorooctane sulfonamide	31506-32-8	MeFOSA	Wellington Labs	N-MeFOSA-M	d-MeFOSA*, d-EtFOSA
	N-Ethylperfluorooctane sulfonamide	4151-50-2	EtFOSA	Wellington Labs	N-EtFOSA-M	d-EtFOSA
	N-Methyl-N-(2-hydroxyethyl)perfluorooctane sulfonamide	24448-09-7	MeFOSE	Wellington Labs	N-MeFOSE-M	d7-MeFOSE
	N-Ethyl-N-(2-hydroxyethyl)perfluorooctane sulfonamide	1691-99-2	EtFOSE	Wellington Labs	N-EtFOSE-M	d7-MeFOSE
Mass-labeled standards	2-Perfluorohexyl[1,1-2H2]-[1,2-13C2] ethanol	NA	13C-6:2 FTOH	Wellington Labs	MFHET	
	2-Perfluorooctyl-[1,1-2H2]-[1,2-13C2]-ethanol	NA	13C-8:2 FTOH	Wellington Labs	MFOET	
	2-Perfluorodecyl[1,1-2H2]-[1,2-13C2]ethanol	NA	13C-10:2 FTOH	Wellington Labs	MFDET	
	N-methyl-d3-perfluoro-1-octanesulfanamide	NA	d-MeFOSA	Wellington Labs	d-N-MeFOSA-M	
	N-ethyl-d5-perfluoro-1-octanesulfonamide	NA	d-EtFOSA	Wellington Labs	d-N-EtFOSA-M	
	2-(N-methyl-d3-perfluoro-1-octanesulfonamido)ethan-d4-ol	NA	d7-MeFOSE	Wellington Labs	d7-N-MeFOSE-M	

Table S5: Physico-chemical properties of neutral PFAS included in this study. MW: Molecular weight

Analyte		Vapor pressure, p^* (Pa)							Octanol-air partition coefficient, K_{OA}									
Short name	**MW (g mol^{-1})**	Lei et al. 2004[2]	Stock et al. 2004[3]	Shoeib et al. 2004[4]	Kim et al. 2015[5]	OPERA 2022[6]	**mean**	**std. dev.**	Lei et al. 2004[2]	Shoeib et al. 2004[4]	Goss et al. 2006[7]	Thuens et al. 2008[8]	Dreyer et al. 2009[9]	Kim et al. 2015[5]	Salt-hammer et al. 2022[10]	OPERA 2022[6]	**mean**	**std. dev.**
6:2 FTOH	364.1	145	713	NA	38	80	**244**	273	3.6	NA	5.3	4.8	NA	5.4	NA	4.1	**4.6**	0.70
8:2 FTOH	464.1	46	254	NA	13	28	**85**	98	4.2	NA	5.6	5.6	NA	6.2	4.9	4.2	**5.1**	0.74
10:2 FTOH	564.1	13	144	NA	4.9	7.3	**42**	59	4.8	NA	NA	5.7	NA	6.9	NA	4.8	**5.5**	0.85
8:2 FTAC	518.2	NA	NA	NA	NA	20	**20**	NA	NA	NA	NA	NA	5.2	NA	NA	4.5	**4.9**	0.34
10:2 FTAC	618.2	NA	NA	NA	NA	14	**14**	NA	NA	NA	NA	NA	5.7	NA	NA	4.8	**5.2**	0.48
MeFOSA	513.2	NA	NA	NA	10	1.6E-02	**5.1**	5.1	NA	NA	NA	NA	6.3	6.4	6.2	4.6	**5.8**	0.74
EtFOSA	527.2	2.4	NA	NA	7.4	6.7E-04	**3.3**	3.1	5.9	NA	NA	NA	6.6	6.6	NA	4.9	**6.0**	0.68
MeFOSE	557.2	0.33	NA	4.0E-04	5.9	1.3E-03	**1.6**	2.5	7.1	7.7	NA	NA	6.4	6.7	NA	6.7	**6.9**	0.44
EtFOSE	571.3	0.19	NA	1.7E-03	4.4	1.2E-01	**1.2**	1.8	6.8	7.78	NA	NA	6.7	6.9	7.4	7.5	**7.2**	0.40

Table S6: Air samples collected during the IPA Campaign

Home ID	Sampling period	Sampling month	Sample type collected[a]			
			Total air	Pre-filtered (gas phase)	Field blank	Break-through
65	t = 0	July	x	x	x	
	t = 3 months	October	x	x		x
	t = 6 months	January		x		
18	t = 0	July	x	x	x	
	t = 3 months	October	2x			
	t = 6 months	January		x		
78	t = 0	July	x	x	x	
	t = 3 months	October	x	x		
	t = 6 months	January		x		
30	t = 0	July	x	x	x	
	t = 3 months	October	x	x		
	t = 6 months	February		x		
82	t = 0	August	x	x	x	
	t = 3 months	NA	NA	NA	NA	NA
	t = 6 months	NA	NA	NA	NA	NA
50	t = 0	August	x	x	x	
	t = 3 months	November	x	x		
	t = 6 months	January		x		
43	t = 0	August	x	x	x	
	t = 3 months	November	x			x
	t = 6 months	February		x		
35	t = 0	August	x	x		
	t = 3 months	November	2x		x	
	t = 6 months	February		x	x	x
10	t = 0	September	x	x		
	t = 3 months	December	2x		x	
	t = 6 months	February		x	x	
59	t = 0	September	x	x		
	t = 3 months	December	x		x	x
	t = 6 months	March		x		
01	t = 0	November	x	x	x	
	t = 3 months	NA	NA	NA	NA	NA
	t = 6 months	May	x	x		x
		Total	21 (24 incl. duplicates)	25	13	5

[a] x indicates each sample collected

Section S1: Additional Air Sampling Details

The filter housing (Filter Cartridge Assembly, Supelco, Bellefonte, PA) was rinsed with de-ionized (DI) water and methanol before each use. Before and after sampling, PUF-XAD2-PUF cartridges were wrapped in pre-baked (550°C, 12 h) aluminum foil and kept in polypropylene (PP) zipper bags (Ziploc Freezer Bags Quart, San Diego, CA). Prior to use, pre-baked QFFs were kept individually in Petri dishes lined with baked aluminum foil, sealed in PP zipper bags and stored in a -20°C freezer. After sampling, QFFs were placed again in their aluminum-lined Petri dishes and sealed in zipper bags. All samples were stored at -80°C until analysis.

In total, 13 PUF-XAD2-PUF and 11 QFF field blanks were collected at each home to determine field detection limits (FDLs). On five occasions (different days at different homes), two PUF-XAD2-PUF cartridges were connected in series to assess breakthrough. On three occasions (different days at different homes), duplicate total air (PUF-XAD2-PUF, no filter) samples were collected to assess field measurement precision. **Tables S7-S13** provide quality control measures.

Section S2: Additional Cloth Sampling Details

Per manufacturer information, the cotton cloth was bleached first, then softener was added and it was dried and compacted. The softener is a cationic softener and lubricant made with quaternary amines (i.e., salts of quaternary ammonium cations).[11] Quaternary amines have one or two long alkyl chains linked to an ammonium salt. However, the exact composition of the softener is proprietary and was not disclosed. Cationic softener molecules, including those made from quaternary amines, create a more hydrophobic surface around the fibers, because their cation ends are oriented towards the negatively charged fiber and the alkyl chains are positioned outward. Before sampling, cloth was cut to size (see below), laundered with a fragrance free, sensitive skin detergent (Free & Gentle Liquid Laundry Detergent, Tide, Cincinnati, OH) at a normal setting, and then hung outside for 3-4 months to equilibrate with ambient air, which typically has much lower PFAS concentrations than indoor air. Cloth strips were protected by a large tent with open sides to allow for permanent air movement. After the "outdoor cleaning" period, all cloth strips to be deployed concurrently in a single home (i.e., for sampling, blanks, duplicates) were wrapped together in baked aluminum foil, sealed in a PP zipper bag, and stored at -20°C until use.

Sampler A (**Figure S7A**) holds six clean cotton cloth strips (~28 cm x 3.8 cm) attached to a stainless-steel cloth hanger using a stainless-steel wire and small metal binder clips so that the strips could hang freely from the hanger and were not in contact with each other. Stainless-steel safety pins were used as weights and to prevent the strips from rolling up. An aluminum roof was attached to

each hanger to protect the strips from the deposition of large particles. Two hangers with a total of 12 suspended cloth strips were placed in the closet of the master bedroom in each home (exception: Home 78 had only one hanger with seven cloth strips). Two additional cloth strips per home were collected as "t = 0" samples during deployment of the hangers. Then, duplicate cloth strip samples were collected after 24 hours (t = 1), 6 days (t = 2), 1 month (t = 3), 3 months (t = 4), 6 months (t = 5), and at the end of each home's participation in the field campaign (t = 6) (exception: Home 78). On 1-3 occasions per home, cloth strip field blanks were brought to the home when sampling occurred. Each collected strip was placed immediately in a labeled and weighed 50 mL PP centrifuge tube (Corning 430921, Corning, NY) after taking it from the hanger and removing the safety pins. The centrifuge tubes were then weighed again, placed in a PP zipper bag, and stored at -80°C until analysis.

Sampler B (**Figure S7B**) consists of 14 larger clean cotton pieces (~28 cm x 15 cm) that were folded once and then distributed between folded clothing items, generally in a dresser drawer located in the master bedroom of each home. In one home (Home 35) the dresser was in the closet rather than the bedroom. In a few instances (Homes 65, 43, and 59), dresser drawers were not available and the folded cloth pieces were instead distributed between folded clothing items stacked on shelves in the master bedroom closet. At t = 0, two cloth pieces were collected without placement between clothing. Subsequently, two cloth pieces (designated "A" and "B") were collected after 24 hours (t = 1), 6 days (t = 2), 1 month (t = 3), 3 months (t = 4), 6 months (t = 5), and at the end of each home's participation in the field campaign (t = 6). As with the cloth strips, cloth pieces wrapped in baked aluminum foil were brought to the homes during 1-3 sampling visits per home, then unwrapped at the home, exposed briefly (1-2 min) to the air, and sampled together with the actual cloth pieces to serve as field blanks. Each collected cloth piece was removed from the drawer/stack of clothing, wrapped individually in baked aluminum foil, placed in a PP zipper bag and stored at -80°C until analysis.

Additionally, at the beginning of the campaign, study participants were asked if they were willing to donate one piece of clothing made of 100% cotton that had been laundered and then stored in their home for at least three months without being worn. All participants agreed. These clothing items were collected either during the t = 0 or the t = 4 (3-months) sampling period, wrapped in baked aluminum foil, placed in a PP zipper bag, and stored at -80°C until analysis. The cotton clothing items selected by participants for extraction were mostly t-shirts (N = 9), as well as one pair of pajama pants and one cotton rag. Results are reported both as mass-based concentrations and area-based concentrations. Because the areal density and thickness of the fabrics varied greatly, the discussion of the results focuses on the mass-based data to provide a more direct way of comparison.

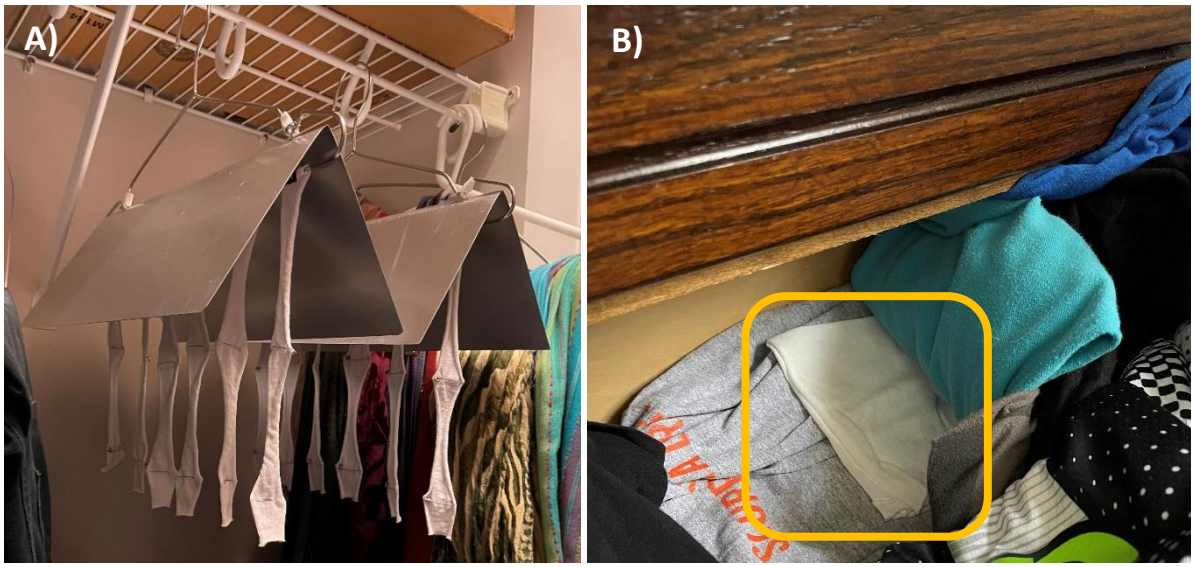

Figure S7: A) Cloth strips suspended on hangers (Sampler A) and B) a folded cloth piece placed in a dresser drawer (Sampler B) in a participant's home.

Section S3: Additional Sample Processing and Analysis Details

The PUF plugs and XAD2 were carefully removed from the cartridge with a pair of clean tweezers and placed, together, in a PP jar (SCP Science DIGI TUBE 100 mL, Fisher Scientific, Waltham, MA). Two ~10 cm x 10 cm sections were cut from each clothing item for extraction. A single clothing section or cloth piece section (~7 cm x 15 cm) was each placed into a weighed 50 mL PP centrifuge tube for extraction. Cloth strips were extracted individually in their entirety in the 50 mL PP tubes in which they were placed during sampling. For PUF-XAD2-PUF samples (and blanks), extraction took place with 40 mL of the 3:1 (v/v) hexane/methanol solvent mixture, followed by 20 mL of the same solvent mixture, and each extract was poured into a separate 50 mL PP centrifuge tube (Corning 430921, Corning, NY), immediately reduced under a gentle stream of nitrogen to ~20 mL, and then combined. The hexane/methanol solvent mixture was used to expedite solvent evaporation in order to improve recoveries. To avoid interactions of hexane with the PP centrifuge tubes, samples were processed as quickly as possible. For cloth strips, cloth pieces and clothing sections, extraction took place with 20 mL of the solvent mixture, followed by 10 mL of the solvent mixture, with first and second extracts being combined immediately into a single 50 mL PP centrifuge tube.

For extract clean-up, ENVI-Carb (~50 mg; Supelclean™ ENVI-Carb™ SPE Bulk Packing, Supelco, Bellefonte, PA) was added to the extracts. For the PUF-XAD2-PUF extracts, the ENVI-Carb addition followed after the extracts were combined. After shaking for about 30 seconds, extracts were centrifuged (5 min, 5000 rpm). Extract volume was reduced with a gentle stream of nitrogen to ~5 mL and filtered with a nylon syringe filter (13 mm diameter, 0.22 µm pore size; VWR, Radnor, PA) into a 15 mL PP centrifuge tube (Corning CentriStar, Corning, NY). Evaporation continued to a final

volume of 1000 µL (PUF-XAD2-PUF) or 300 µL (cloth, clothing). A 200 µL aliquot of the PUF-XAD2-PUF extract or the 300 µL cloth/clothing extract was transferred into a PP autosampler vial (300 µL, Thermo Scientific, Fisher Scientific, Pittsburgh, PA) for instrumental analysis. The final extracts volumes were chosen based on extensive method development to achieve reasonable recoveries as well as concentrations within the range of the calibration curve.

Samples were injected using pulsed splitless injection (injection volume 2 µL; pulse pressure 30 psi for 0.5 minutes; inlet temperature 250°C; 1.5 mL min^{-1} flow rate; helium as carrier gas). The temperature program was as follows: The initial GC oven temperature is 60°C, which is held for 2 minutes, then the temperature is increased at a rate of 10°C min^{-1} to 200°C, and then further increased at a rate of 25°C min^{-1} to 240°C, which is held for 5 minutes. The MS source temperature will be set to 230°C and the MS quad temperature to 150°C. Quantifying and qualifying ions are listed in **Table S14**. Qualifying and quantifying ions for the analysis of neutral PFAS were selected because their abundances were strongest over the full range of calibration standard concentrations for the method and instrument used in this work and resulted from an extensive method development effort in advance of the sampling campaign. Optimal qualifying and quantifying ions may vary by instrument and method. Concentrations, statistics, and calculations using these values are reported in **Tables S16-S21.**

Section S4: Quality assurance and quality control

Average neutral PFAS extraction recoveries (**Table S7**) are highest for the air samples (74-108%) and lowest for the cotton clothing (30-66%); recoveries for suspended and folded cloth samples fall in between (43-74%). For air and cloth samples, recoveries of d7-MeFOSE are highest (108% and 66-74%, respectively) and 13C-6:2 FTOH are lowest (74% and 43-46%, respectively). Lower recoveries for the clothing samples likely occurred because some of the materials are thick and dyed, and extract evaporation took longer, allowing more time for loss of more volatile compounds. For five clothing samples, the recoveries of 13C-6:2 FTOH are below 30%. In these cases, 6:2 FTOH was not corrected for recoveries and the uncorrected concentrations are reported and flagged (see **Tables S20** and **S21**).

Neutral PFAS field blank data are provided in **Table S8** and detection limits (**Table S9**) range from 0.03 ng m^{-3} to 0.2 ng m^{-3} for PUF-XAD2-PUF air samples and 0.001 ng cm^{-2} to 0.1 ng cm^{-2} for cloth and clothing samples, where the method detection limit (MDL) is given by the larger of the instrument detection limit (IDL) and the field-blank-based detection limit (FDL). The IDL is the mean concentration plus three times the standard deviation of repeat (N = 7) injections of the lowest calibration standard used (0.001 ng $µL^{-1}$). The FDL is the mean plus three standard deviations of the

field blank values for that type of sample. Because field blanks could not be collected for the cotton clothing, IDLs were used as MDLs. For PUF-XAD2-PUF air samples, selected species were observed in at least one field blank, specifically: 6:2 FTOH (detection frequency (DF)=23%), 8:2 FTOH (DF=15%), and EtFOSA (DF=15%). However, the FDL is only higher than the IDL for 6:2 FTOH, and therefore the IDL was used for all other compounds to calculate the MDL. Low levels of PFAS were also detected in some cloth strip and cloth piece field blanks, specifically: 6:2 FTOH (DF=67-69%), 8:2 FTOH (DF=15%), 10:2 FTOH (DF=7-15%), and EtFOSA (DF=30-38%). The two FOSEs were also detected in some cloth strip (DF =33-37%) and cloth piece (DF=92%) field blanks.

Breakthrough (N = 5) was modest for PUF-XAD2-PUF air samples, specifically: 18% ± 5% for 6:2 FTOH, <MDL - 16% for 8:2 FTOH, and <MDL to 13% for 10:2 FTOH (**Table S10**). FTOHs were detected in the downstream PUF-XAD2-PUF cartridges with a detection frequency of 100%, 60%, and 40% for 6:2 FTOH, 8:2 FTOH, and 10:2 FTOH, respectively. None of the other analytes were detected in the downstream PUF-XAD2-PUF cartridges. Results were not corrected for breakthrough.

Estimates of field measurement and analytical precision were obtained by analyzing paired collocated field samples (duplicates) and by conducting replicate analyses of the same extract. Pooled coefficients of variation (CV_{pooled}) were calculated using the pooled standard deviation (s_{pooled}) for paired samples:

$$s_{pooled} = \frac{\sqrt{\sum(x_1 - x_2)^2}}{2 \cdot N} \quad \text{Eq. 1}$$

where x_1 and x_2 are the data points (>MDL) of the duplicate pair and N is the number of duplicate pairs. The mean $\bar{X}$ of all duplicate pairs is calculated as

$$\bar{X} = \frac{\sum(x_1 + x_2)}{2 \cdot N} \quad \text{Eq. 2}$$

And then CV_{pooled} is

$$CV_{pooled} = \frac{s_{pooled}}{\bar{X}} \cdot 100\% \quad \text{Eq. 3}$$

The three pairs of duplicate total-air samples showed good agreement with CV_{pooled} values of better 6% (**Table S11**). Duplicate samples (71 pairs) of the cloth strips showed good agreement for MeFOSE and EtFOSE, with CV_{pooled} values of 5% for both for the strips sampled at the same time from the same home (**Table S11**). The variation between cloth strip duplicates was larger for the FTOHs, with CV_{pooled} values ranging from 18% to 46%, indicating that for more volatile species, small changes in environmental conditions as well as in the proximity to sources may have a greater impact on their

partitioning behavior. Pooled CVs for duplicate cloth piece and household clothing items are in the range of 10%-16% and 41%-115%, respectively (**Table S11**).

Replicate analyses conducted on 18% of air sample extracts and 15% of cloth extracts over multiple analytical runs (**Table S12**) provided estimates of analytical precision (Eqn. 1-3). CV_{pooled} values were better than 9% for all air, cloth strip and cloth piece samples across compounds, with the exception of 6:2 FTOH in air samples and EtFOSE in cloth strips (23-26%) and EtFOSA in cloth pieces (65%).

While air samples were extracted and analyzed promptly (within 2 weeks of sampling), cloth samples were stored for up to 9 months before analysis. Therefore, positive controls were prepared, stored, and extracted with the last batch of cloth strip samples after 11.2 months of storage, to evaluate whether losses may have occurred during storage. Clean cloth strips (N = 3) were spiked 150 ng each of the nine analytes when the first cloth samples were collected and were stored the same way as the actual samples. On average, 94% of the spiked mass was recovered, with values ranging from 76% (10:2 FTAC) to 121% (10:2 FTOH) (**Table S13**).

Table S7: Extraction recoveries

	Air samples			Cloth Strips (Sampler A)		
	Average	**Std. Dev.**	**N**	**Average**	**Std. Dev.**	**N**
13C-6:2 FTOH	74%	38%	85	46%	13%	179
13C-8:2 FTOH	75%	35%	85	47%	18%	179
13C-10:2 FTOH	90%	16%	85	55%	15%	179
d-EtFOSA	82%	25%	85	68%	28%	179
d-MeFOSA	80%	42%	36	62%	15%	76
d7-MeFOSE	108%	25%	85	74%	26%	179

	Cloth Pieces (Sampler B)			Cotton Clothing		
	Average	**Std. Dev.**	**N**	**Average**	**Std. Dev.**	**N**
13C-6:2 FTOH	43%	9%	101	30%	18%	22
13C-8:2 FTOH	49%	11%	101	38%	21%	22
13C-10:2 FTOH	49%	10%	101	41%	19%	22
d-EtFOSA	56%	12%	101	40%	14%	18
d-MeFOSA	59%	15%	101	66%	28%	22
d7-MeFOSE	66%	15%	101	48%	26%	22

Table S8: Neutral PFAS in air and cloth sample field blanks. "nd" = not detected. "FDL" = field detection limit, calculated as the field blank mean plus three times the standard deviation. For calculation of means and standard deviations, nd was replaced by 0

		Air Sample Field Blank Concentrations (ng m^{-3}, N = 13) assuming 21 m^3 of nominal sample volume								
Time of sampling	**Home ID**	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
t = 0	65	nd	0.01	nd	nd	nd	nd	nd	nd	nd
t = 0	18	nd	0.04	nd	nd	nd	nd	nd	nd	nd
t = 0	78	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	82	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	50	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	43	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	01	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 3 months	35	0.02	nd	nd	nd	nd	nd	nd	nd	nd
t = 3 months	10	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 3 months	59	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 6 months	35	0.21	nd	nd	nd	nd	0.03	nd	nd	nd
t = 6 months	10	0.09	nd	nd	nd	nd	0.03	nd	nd	nd
mean (all samples)		0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
std dev (all samples)		0.06	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
min (all samples)		nd	nd	nd	nd	nd	nd	nd	nd	nd
max (all samples)		0.21	0.04	nd	nd	nd	0.03	nd	nd	nd
# detect		3	2	0	0	0	2	0	0	0
% detect		23%	15%	0%	0%	0%	15%	0%	0%	0%
Calculated FDL		0.20	0.03	0.00	0.00	0.00	0.04	0.00	0.00	0.00

		Cloth Strip Field Blank Concentrations (ng cm^{-2}, N = 27)								
Time of sampling	**Home ID**	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
t = 0	65	0.002	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	65	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 91 days	65	0.009	nd	nd	nd	nd	nd	nd	nd	nd
t = 273 days	65	0.031	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	18	nd	nd	nd	nd	nd	nd	nd	**0.025**	**0.020**
t = 91 days	18	0.011	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	78	nd	nd	nd	nd	nd	nd	nd	**0.023**	**0.018**
t = 31 days	78	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 228 days	78	0.019	nd	nd	nd	nd	0.003	nd	nd	nd

t = 0	30	0.029	nd	nd	nd	nd	0.002	nd	0.002	0.002
t = 91 days	30	0.014	nd	nd	nd	nd	nd	nd	nd	nd
t = 202 days	30	0.056	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	50	0.022	**0.019**	**0.014**	nd	nd	0.001	nd	0.001	0.001
t = 31 days	50	0.022	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	43	0.000	0.009	nd	nd	nd	nd	nd	nd	nd
t = 31 days	43	0.037	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	35	nd	0.006	nd	nd	nd	nd	nd	nd	nd
t = 31 days	35	0.039	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	10	nd	nd	nd	nd	nd	0.002	nd	0.002	0.002
t = 91 days	10	0.008	nd	nd	nd	nd	nd	nd	nd	nd
t = 254 days	10	0.020	nd	nd	nd	nd	0.002	nd	0.002	0.002
t = 0	59	0.003	nd	nd	nd	nd	nd	nd	nd	nd
t = 91 days	59	nd	nd	nd	nd	nd	nd	nd	0.001	nd
t = 0	01	0.001	nd	nd	nd	nd	nd	nd	nd	nd
t = 84 days	01	0.028	**0.020**	**0.015**	nd	nd	0.001	nd	0.002	0.002
t = 175 days	01	nd	nd	nd	nd	nd	0.002	nd	0.002	0.002
t = 0	82	0.018	nd	nd	nd	nd	0.003	nd	0.002	0.002
mean (all samples)		0.014	0.002	0.001	0.000	0.000	0.001	0.000	nd	0.002
std dev (all samples)		0.015	0.005	0.004	0.000	0.000	0.001	0.000	0.006	0.005
min (all samples)		nd	nd	nd	nd	nd	nd	nd	nd	nd
max (all samples)		0.056	0.020	0.015	nd	nd	0.003	nd	nd	0.020
# detect		18	4	2	0	0	8	0	10	9
% detect		67%	15%	7%	0%	0%	30%	0%	37%	33%
Calculated FDL		0.059	0.018	0.012	0.000	0.000	0.004	0.000	0.021	0.017

Cloth Piece Field Blank Concentrations (ng cm^{-2}, N = 13)										
Time of sampling	**Home ID**	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
t = 0	82	nd	nd	nd	nd	nd	nd	nd	0.003	0.002
t = 0	78	0.085	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	18	0.052	nd	nd	nd	nd	nd	nd	0.014	0.001
t = 273 days	65	0.041	nd	nd	nd	nd	nd	nd	0.001	0.001
t = 0	10	0.077	0.006	0.010	nd	nd	nd	nd	0.001	0.001
t = 202 days	30	0.045	0.008	0.015	nd	nd	nd	nd	0.001	0.001
t = 0	65	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	30	nd	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	50	0.020	nd	nd	nd	nd	nd	nd	nd	nd

t = 0	43	0.014	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	35	0.017	nd	nd	nd	nd	0.001	nd	nd	nd
t = 0	59	0.017	nd	nd	nd	nd	nd	nd	nd	nd
t = 0	01	nd	nd	nd	nd	nd	0.001	nd	0.001	0.001
mean (all samples)		0.028	0.001	0.002	0.000	0.000	0.000	0.000	0.002	0.001
std dev (all samples)		0.028	0.002	0.005	0.000	0.000	0.000	0.000	0.003	0.001
min (all samples)		nd	nd	nd	nd	nd	nd	nd	nd	nd
max (all samples)		0.085	0.008	0.015	nd	nd	0.001	nd	0.014	0.002
# detect		9	2	2	0	0	5	0	12	12
% detect		69%	15%	15%	0%	0%	38%	0%	92%	92%
Calculated FDL		0.112	0.008	0.016	0.000	0.000	0.001	0.000	0.012	0.003

Table S9: Instrument Detection Limits (IDLs) and Method Detection Limits (MDLs). The MDL is given by the larger of the IDL and the Field blank-based Detection Limit (FDL). The IDL is the mean concentration plus three times the standard deviation for repeated injections of the lowest calibration standard used (0.001 ng μL^{-1}). The FDL is the mean plus three standard deviations of the field blanks for that sample type. Because field blanks could not be collected for the cotton clothing, only the IDLs were used to calculate MDLs. In the table, *italic* printed values are based on the IDL and underlined values are based on the FDL

	IDLs		**MDLs**					
Analyte	**(ng)**	**(ng μL^{-1})**	**air samples (ng)***	**air samples (ng m^{-3})****	**cloth strips (ng cm^{-2})*****	**cloth pieces (ng cm^{-2})******	**clothing (ng cm^{-2})*******	**clothing (ng g^{-1})*******
6:2 FTOH	0.003	0.0016	4.1	0.20	0.059	0.11	*0.003*	*0.36*
8:2 FTOH	0.004	0.0021	*2.1*	*0.10*	0.018	0.008	*0.005*	*0.47*
10:2 FTOH	0.005	0.0024	*2.4*	*0.11*	0.012	0.016	*0.005*	*0.53*
8:2 FTAC	0.004	0.0019	*1.9*	*0.09*	*0.006*	*0.005*	*0.004*	*0.42*
10:2 FTAC	0.004	0.0022	*2.2*	*0.10*	*0.006*	*0.006*	*0.005*	*0.47*
EtFOSA	0.005	0.0025	*2.5*	*0.12*	*0.007*	*0.007*	*0.005*	*0.54*
MeFOSA	0.005	0.0027	*2.7*	*0.13*	*0.008*	*0.007*	*0.006*	*0.58*
MeFOSE	0.001	0.00061	*0.61*	*0.03*	0.021	0.012	*0.001*	*0.13*
EtFOSE	0.001	0.00058	*0.58*	*0.03*	0.017	0.003	*0.001*	*0.13*

italic printed values are based on the IDL, underlined values are based on the FDL

* for 1000 µL of extract

** for 21 m^3 of air sample

*** for 300 µL of extract, normalized by an average cloth strip area of 103.6 cm^2

**** for 300 µL of extract, normalized by an average cloth piece area of 109.4 cm^2

***** for 300 µL of extract, normalized by an average cloth piece area of 141.8 cm^2 or average cloth weight of 2.73 g

Table S10: Breakthrough tests during air sampling (N = 5). "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0. For breakthrough, "NA" indicates that analyte was not found in either the downstream not the upstream cartridge, while "0%" indicates that analyte was detected in the upstream cartridge, but not in the downstream cartridge.

		Concentrations (ng m^{-3}) measured in downstream cartridge								
Time of sampling	**Home ID**	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**Me-FOSA**	**Me-FOSE**	**EtFOSE**
t = 3 months	**65**	**2.84**	nd	nd	nd	nd	nd	nd	nd	nd
t = 3 months	**43**	**3.52**	**0.13**	**0.15**	nd	nd	nd	nd	nd	nd
t = 3 months	**59**	**0.21**	nd	nd	nd	nd	nd	nd	nd	nd
t = 6 months	**35**	**1.49**	**0.70**	nd	nd	nd	nd	nd	nd	nd
t = 6 months	**01**	**1.98**	**0.74**	**0.30**	nd	nd	nd	nd	nd	nd
	MDL	0.20	0.10	0.11	0.09	0.10	0.12	0.13	0.03	0.03
	mean (all samples)	2.01	0.32	0.09	0.00	0.00	0.00	0.00	0.00	0.00
	std dev (all samples)	1.14	0.34	0.12	0.00	0.00	0.00	0.00	0.00	0.00
	min (all samples)	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	max (all samples)	3.52	0.74	0.30	0.00	0.00	0.00	0.00	0.00	0.00
	# total	5	5	5	5	5	5	5	5	5
	# detect >MDL	5	3	2	0	0	0	0	0	0
	% detect >MDL	100%	60%	40%	0%	0%	0%	0%	0%	0%
Breakthrough	**65**	21%	<MDL	<MDL	NA	NA	NA	NA	<MDL	<MDL
Breakthrough	**43**	16%	2%	5%	<MDL	<MDL	<MDL	NA	<MDL	<MDL
Breakthrough	**59**	9%	<MDL	<MDL	<MDL	<MDL	<MDL	NA	<MDL	<MDL
Breakthrough	**35**	21%	16%	<MDL	NA	NA	<MDL	NA	<MDL	<MDL
Breakthrough	**01**	22%	14%	13%	NA	NA	NA	NA	<MDL	<MDL
	mean	**18%**	**6%**	**4%**	**NA**	**NA**	**<MDL**	**NA**	**<MDL**	**<MDL**

Table S11: Pooled coefficients of variation (%) of duplicate air (N = 3) and cloth samples (N = 71) (including only data above MDL)

Analyte	Air sample duplicates	Cloth strip duplicates	Cloth piece duplicates	Household clothing items
6:2 FTOH	1.9	28	NA	41
8:2 FTOH	5.8	46	16	47
10:2 FTOH	2.8	18	16	42
8:2 FTAC	6.3	NA	NA	NA
10:2 FTAC	1.1	NA	NA	NA
EtFOSA	0.11	27	NA	48
MeFOSA	NA	NA	NA	NA
MeFOSE	2.0	4.8	11	81
EtFOSE	3.1	4.8	10	115

Table S12: Pooled coefficient of variation (%) of repeat air (N = 30), cloth strip (N = 26) and cloth piece (N = 16) sample GC-MS analysis (including only data above MDL)

Analyte	Air sample repeats	Cloth strip repeats	Cloth piece repeats
6:2 FTOH	23	1.0	NA
8:2 FTOH	8.9	5.6	5.1
10:2 FTOH	5.7	28	1.6
8:2 FTAC	5.5	NA	NA
10:2 FTAC	2.8	NA	NA
EtFOSA	15	NA	65
MeFOSA	NA	NA	NA
MeFOSE	5.0	8.8	0.9
EtFOSE	6.7	26	2.5

Table S13: Recovery (%) of neutral PFAS (150 ng spiked mass per analyte) from cloth strips (positive controls) after 11.2 months of storage

Analyte	CS PC-01	CS PC-02	CS PC-03	Mean ± std. dev.
6:2 FTOH	89	83	90	88 ± 3
8:2 FTOH	113	114	107	111 ± 3
10:2 FTOH	122	123	119	121 ± 2
8:2 FTAC	81	80	76	79 ± 2
10:2 FTAC	75	78	76	76 ± 1
EtFOSA	82	83	80	82 ± 1
MeFOSA	66	66	64	65 ± 1
MeFOSE	117	117	112	115 ± 2
EtFOSE	108	109	105	107 ± 2

Table S14: Quantifying and qualifying ions used for PFAS analysis in SIM mode (EI source). Ions were determined and assigned based on the literature[4, 12-18] and in-house method development

Analyte	Quantifying ion (m/z)	Qualifying ion (m/z)
13C-6:2 FTOH	348	131
13C -8:2 FTOH	448	131
13C -10:2 FTOH	509	131
d-EtFOSA	450	113
d-MeFOSA	97	450
d7-MeFOSE	531	467
6:2 FTOH	344	131
8:2 FTOH	405	131
10:2 FTOH	505	131
8:2 FTAC	518	55
10:2 FTAC	618	55
EtFOSA	448	108
MeFOSA	94	448
MeFOSE	526	462
EtFOSE	540	448

Section S5: Calculation of across-home and within-home variability of total-air and gas-phase samples

Total-air samples and gas-phase samples were assessed separately in these calculations. To calculate the across-home variability (AHV, %), samples were attributed to either the summer (July-September), the fall (October-December), or the winter (January-April) sampling period. For example, for the gas-phase samples, 10 samples were collected in the summer sampling period, 5 samples were collected in the fall, and 10 samples were collected in the winter sampling period. No more than one sample per home was collected in any one season. Then, the standard deviation across homes was calculated for each compound and season. Standard deviations were then pooled across seasons (s_{pooled}) as follows:

$$s_{pooled} = \sqrt{\frac{\sum(n_i - 1) \cdot s_i^2}{\sum n_i - N}} \quad \text{Eq. 4}$$

Where s_i is the standard deviation of the group, in this case "season i," n_i is the number of measurements in the group, and N is the total number of groups that are pooled, in this case N = 3 for three seasons.

The AHV is then the pooled coefficient of variation (CV, %) based on s_{pooled}

$$CV\ (\%) = \frac{s_{pooled}}{\bar{X}} \cdot 100\% \quad \text{Eq. 5}$$

Where $\bar{X}$ is the mean over all data points, in this example the mean of all gas-phase concentrations from all homes, calculated as described in Eq. 2.

The within-home variability (WHV, %) was similarly calculated as the pooled coefficient of variation (Eq. 5), but where the pooled standard deviation is calculated by defining each group as the samples from the same home. Total-air samples were collected only twice in each home. For pairs, the pooled standard deviation (s_{pooled}) is calculated as follows:

$$s_{pooled} = \sqrt{\frac{\sum d_i^2}{2 \cdot N}} \quad for\ pairs \qquad \text{Eq. 6}$$

Where d_i is the difference between the two data points in group i, in this case the difference between the two concentrations measured in home i, and N is the total number of data pairs (here, N = 10, for the number of homes included). Gas-phase samples were collected twice in many homes, but some homes had three gas-phase samples. Thus, s_{pooled} was calculated using Eq. 4, substituting d_i for s_i when n_i = 2.

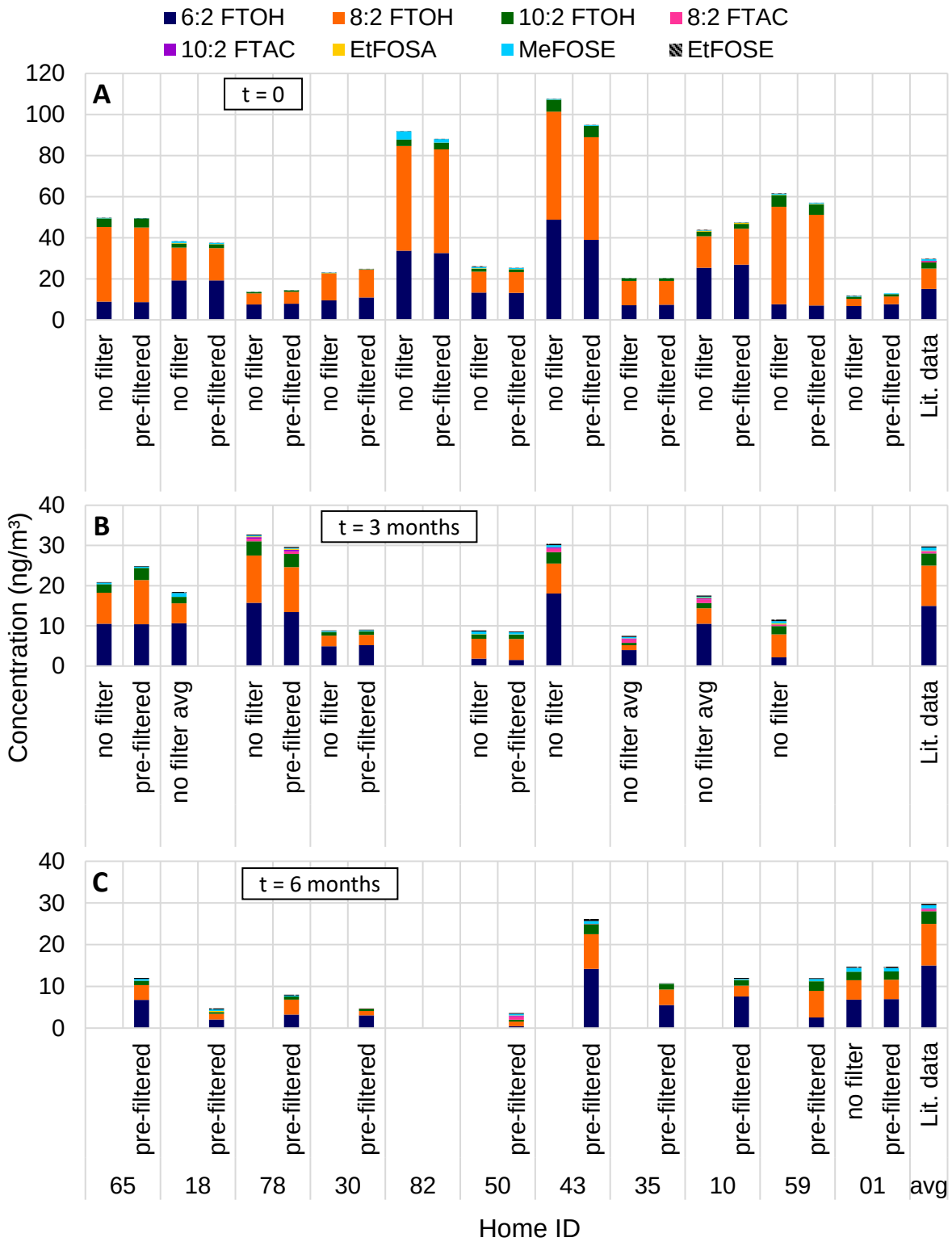

Figure S8: Air concentration profiles for neutral PFAS in homes measured during A) the first sampling visit (t = 0), B) the second sampling visit (t = 3 months), and C) the third sampling visit (t = 6 months). The label "no filter" refers to total-air samples and "pre-filtered" refers to gas-phase samples. The bar with results for "Lit. data" is based on multiple studies.[16, 19-26] MeFOSA was not detected in any samples and is therefore not shown. If there is no x-axis label, then no sample was collected for that home during that sampling period.

Table S15: Neutral PFAS in total-air and gas-phase samples. "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0

			Air Concentration (ng m^{-3})								
Time step	**Home ID**	**Sample type**	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
t = 0	**65**	total air	**8.83**	**36.36**	**4.20**	nd	nd	0.05	nd	**0.19**	**0.05**
t = 0	**65**	gas phase	**8.58**	**36.41**	**4.36**	nd	nd	nd	nd	**0.10**	**0.02**
t = 0	**18**	total air	**19.25**	**15.92**	**2.05**	nd	nd	**0.16**	nd	**0.77**	**0.15**
t = 0	**18**	gas phase	**19.19**	**15.79**	**1.81**	nd	nd	**0.15**	nd	**0.56**	**0.06**
t = 0	**78**	total air	**7.51**	**5.40**	**0.64**	nd	nd	0.04	nd	**0.09**	**0.03**
t = 0	**78**	gas phase	**7.88**	**5.77**	**0.61**	nd	nd	0.03	nd	**0.06**	0.02
t = 0	**30**	total air	**9.48**	**13.07**	**0.21**	nd	nd	0.07	nd	**0.09**	**0.05**
t = 0	**30**	gas phase	**10.90**	**13.60**	**0.05**	nd	nd	0.10	nd	**0.07**	**0.04**
t = 0	**82**	total air	**33.63**	**51.01**	**3.15**	nd	nd	0.02	nd	**4.06**	**0.05**
t = 0	**82**	gas phase	**32.59**	**50.47**	**3.24**	nd	nd	0.01	nd	**1.77**	0.02
t = 0	**50**	total air	**13.31**	**10.21**	**1.39**	nd	nd	**0.15**	nd	**0.69**	**0.30**
t = 0	**50**	gas phase	**13.14**	**10.10**	**1.32**	nd	nd	**0.13**	nd	**0.53**	**0.20**
t = 0	**43**	total air	**48.80**	**52.58**	**5.73**	nd	nd	0.04	nd	**0.33**	**0.11**
t = 0	**43**	gas phase	**38.95**	**49.90**	**5.59**	nd	nd	0.05	nd	**0.30**	**0.09**
t = 0	**35**	total air	**7.15**	**11.77**	**1.32**	nd	nd	0.06	nd	**0.08**	**0.05**
t = 0	**35**	gas phase	**7.34**	**11.63**	**1.27**	nd	nd	0.07	nd	**0.07**	**0.05**
t = 0	**10**	total air	**25.31**	**15.43**	**2.19**	nd	nd	**0.48**	nd	**0.27**	**0.20**
t = 0	**10**	gas phase	**26.83**	**17.50**	**2.40**	nd	nd	**0.46**	nd	**0.22**	**0.13**
t = 0	**59**	total air	**7.66**	**47.36**	**5.61**	nd	nd	**0.20**	nd	**0.57**	**0.20**
t = 0	**59**	gas phase	**7.02**	**44.20**	**4.99**	nd	nd	**0.26**	nd	**0.46**	**0.16**
t = 0	**01**	total air	**6.78**	**3.46**	**1.02**	nd	nd	nd	nd	**0.39**	**0.24**
t = 0	**01**	gas phase	**7.63**	**3.81**	**1.12**	nd	nd	nd	nd	**0.30**	nd
t = 3 months	**65**	total air	**10.56**	**7.69**	**2.14**	nd	nd	nd	nd	**0.38**	**0.10**
t = 3 months	**65**	gas phase	**10.38**	**11.04**	**2.99**	nd	nd	nd	nd	**0.34**	**0.11**
t = 3 months	**18**	total air avg	**10.69**	**4.94**	**1.58**	nd	nd	nd	nd	**0.97**	**0.29**
t = 3 months	**78**	total air	**15.75**	**11.78**	**3.49**	**0.69**	**0.40**	**0.18**	nd	**0.24**	**0.22**
t = 3 months	**78**	gas phase	**13.46**	**11.13**	**3.33**	**0.64**	**0.40**	**0.23**	nd	**0.22**	**0.21**
t = 3 months	**30**	total air	**4.97**	**2.61**	**0.81**	nd	nd	0.07	nd	**0.27**	**0.17**
t = 3 months	**30**	gas phase	**5.19**	**2.58**	**0.86**	nd	nd	0.07	nd	**0.20**	**0.14**
t = 3 months	**50**	total air	**1.84**	**4.95**	**1.13**	nd	nd	0.07	nd	**0.60**	**0.30**
t = 3 months	**50**	gas phase	**1.56**	**5.16**	**1.09**	nd	nd	0.11	nd	**0.48**	**0.22**
t = 3 months	**43**	total air	**18.03**	**7.47**	**2.83**	**0.91**	**0.27**	0.07	nd	**0.53**	**0.30**
t = 3 months	**35**	total air avg	**3.97**	**1.24**	**0.55**	**0.92**	**0.19**	0.07	nd	**0.31**	**0.26**
t = 3 months	**10**	total air avg	**10.50**	**3.87**	**1.31**	**0.87**	**0.30**	**0.20**	nd	**0.20**	**0.31**

t = 3 months	**59**	total air	**2.18**	**5.74**	**2.03**	**0.39**	**0.03**	**0.25**	nd	**0.57**	**0.40**
t = 6 months	**65**	gas phase	**6.78**	**3.54**	**1.05**	nd	nd	nd	nd	**0.40**	**0.24**
t = 6 months	**18**	gas phase	**2.08**	**1.34**	**0.42**	nd	nd	**0.23**	nd	**0.40**	**0.23**
t = 6 months	**78**	gas phase	**3.24**	**3.60**	**0.76**	nd	nd	nd	nd	**0.20**	**0.22**
t = 6 months	**30**	gas phase	**3.04**	**1.04**	**0.56**	**0.03**	nd	nd	nd	nd	nd
t = 6 months	**50**	gas phase	**0.46**	**1.12**	**0.39**	**0.83**	**0.18**	0.09	nd	**0.33**	**0.23**
t = 6 months	**43**	gas phase	**14.19**	**8.30**	**2.46**	**0.04**	**0.03**	nd	nd	**0.65**	**0.50**
t = 6 months	**35**	gas phase	**5.54**	**3.68**	**1.36**	nd	nd	0.06	nd	0.02	0.02
t = 6 months	**10**	gas phase	**7.57**	**2.59**	**1.31**	nd	nd	0.03	nd	**0.29**	**0.04**
t = 6 months	**59**	gas phase	**2.56**	**6.38**	**2.27**	nd	nd	0.01	nd	**0.57**	**0.21**
t = 6 months	**01**	total air	**6.83**	**4.63**	**2.05**	nd	nd	nd	nd	**0.90**	**0.29**
t = 6 months	**01**	gas phase	**6.95**	**4.64**	**1.99**	nd	nd	nd	nd	**0.82**	**0.29**
all samples (N = 46)		**MDL**	0.20	0.10	0.11	0.09	0.10	0.12	0.13	0.03	0.03
		# detect > MDL	46	46	45	7	6	13	0	44	40
		% detect > MDL	100%	100%	98%	15%	13%	28%	0%	96%	87%
total air (N = 21)		**# detect > MDL**	21	21	21	5	4	7	0	21	21
		% detect > MDL	100%	100%	100%	24%	19%	33%	0%	100%	100%
		median (all samples)	9.48	7.69	2.03	0.00	0.00	0.07	0.00	0.38	0.20
		mean (all samples)	13.00	15.12	2.16	0.18	0.06	0.10	0.00	0.60	0.19
		std. dev. (all samples)	10.99	16.12	1.50	0.34	0.12	0.11	0.00	0.82	0.11
		min (all samples)	1.84	1.24	0.21	0.00	0.00	0.00	0.00	0.08	0.03
		max (all samples)	48.80	52.58	5.73	0.92	0.40	0.48	0.00	4.06	0.40
gas phase (N = 25)		**# detect >MDL**	25	25	24	2	2	6	0	23	19
		% detect >MDL	100%	100%	96%	8%	8%	24%	0%	92%	76%
		median (all samples)	7.57	6.38	1.32	nd	nd	0.05	nd	0.30	0.13
		mean (all samples)	10.52	13.01	1.90	0.06	0.02	0.08	0.00	0.37	0.14
		std. dev. (all samples)	9.43	14.93	1.44	0.20	0.08	0.11	0.00	0.35	0.12
		min (all samples)	0.46	1.04	0.05	nd	nd	nd	nd	nd	nd
		max (all samples)	38.95	50.47	5.59	0.83	0.40	0.46	nd	1.77	0.50

Table S16: Neutral PFAS in suspended cloth strip samples (Sampler A). N = 143 samples, including 71 duplicates. "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0

Duration of deployment (days)	Home ID	Sample ID	Cloth Strip Concentration (ng cm^{-2})								
			6:2 FTOH	8:2 FTOH	10:2 FTOH	8:2 FTAC	10:2 FTAC	EtFOSA	MeFOSA	M-FOSE	EtFOSE
0	**65**	strip A	nd	nd	nd	nd	nd	nd	nd	nd	nd
0	**65**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
1	**65**	strip A	nd	nd	nd	nd	nd	nd	nd	nd	nd
1	**65**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
6	**65**	strip 04	0.003	nd	nd	nd	nd	nd	nd	nd	nd
6	**65**	strip 07	0.001	nd	nd	nd	nd	nd	nd	nd	nd
31	**65**	strip 02	0.015	nd	nd	nd	nd	nd	nd	**0.080**	**0.046**
31	**65**	strip 05	0.019	nd	nd	nd	nd	nd	nd	**0.079**	**0.046**
91	**65**	strip 03	0.009	nd	nd	nd	nd	nd	nd	**0.065**	**0.039**
91	**65**	strip 06	0.009	nd	nd	nd	nd	nd	nd	**0.062**	**0.037**
188	**65**	strip 09	0.009	0.010	**0.015**	nd	nd	0.002	nd	**0.057**	**0.021**
188	**65**	strip 11	0.003	0.011	**0.017**	nd	nd	0.002	nd	**0.057**	**0.020**
273	**65**	strip 08	0.013	**0.037**	0.004	nd	nd	**0.023**	nd	**0.089**	**0.054**
273	**65**	strip 12	0.027	**0.032**	0.003	nd	nd	**0.022**	nd	**0.081**	**0.049**
0	**18**	strip A	nd	nd	nd	nd	nd	nd	nd	**0.024**	**0.018**
0	**18**	strip B	nd	nd	nd	nd	nd	nd	nd	**0.023**	0.017
1	**18**	strip 01	nd	nd	nd	nd	nd	nd	nd	**0.027**	**0.019**
1	**18**	strip 10	nd	nd	nd	nd	nd	nd	nd	**0.026**	**0.018**
6	**18**	strip 04	nd	nd	nd	nd	nd	nd	nd	**0.043**	**0.024**
6	**18**	strip 07	nd	nd	nd	nd	nd	nd	nd	**0.047**	**0.027**
31	**18**	strip 02	nd	nd	nd	nd	nd	nd	nd	**0.110**	**0.061**
31	**18**	strip 05	nd	nd	nd	nd	nd	nd	nd	**0.107**	**0.060**
91	**18**	strip 05	0.014	nd	nd	nd	nd	nd	nd	**0.162**	**0.084**
91	**18**	strip 06	0.014	nd	nd	nd	nd	nd	nd	**0.166**	**0.089**
182	**18**	strip 08	0.016	0.011	0.010	nd	nd	0.002	nd	**0.208**	**0.104**
182	**18**	strip 11	0.011	0.012	0.010	nd	nd	0.002	nd	**0.199**	**0.103**
276	**18**	strip 09	0.050	**0.034**	0.003	nd	nd	**0.025**	nd	**0.256**	**0.135**
276	**18**	strip 12	0.011	0.004	0.003	nd	nd	**0.026**	nd	**0.250**	**0.135**
0	**78**	strip A	nd	nd	nd	nd	nd	nd	nd	**0.022**	0.017
0	**78**	strip B	nd	nd	nd	nd	nd	nd	nd	**0.022**	0.017
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

31	**78**	strip 04	nd	nd	nd	nd	nd	nd	nd	0.029	0.020
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
91	**78**	strip 01	0.012	**0.090**	**0.108**	nd	nd	nd	nd	**0.042**	**0.036**
91	**78**	strip 05	0.005	**0.054**	**0.089**	nd	nd	nd	nd	**0.039**	**0.033**
182	**78**	strip 03	0.029	**0.046**	**0.063**	nd	nd	0.002	nd	**0.052**	0.003
182	**78**	strip 07	0.019	**0.036**	**0.040**	nd	nd	0.001	nd	**0.045**	0.003
228	**78**	strip 02	0.013	**0.052**	**0.053**	nd	nd	0.002	nd	**0.052**	nd
228	**78**	strip 06	0.040	**0.046**	**0.043**	nd	nd	0.002	nd	**0.053**	nd
0	**30**	strip A	0.040	nd	nd	nd	nd	nd	nd	nd	nd
0	**30**	strip B	0.052	nd	nd	nd	nd	nd	nd	nd	nd
1	**30**	strip 01	nd	nd	0.003	nd	nd	nd	nd	0.002	0.002
1	**30**	strip 10	0.005	nd	0.003	nd	nd	nd	nd	0.002	0.002
6	**30**	strip 04	0.009	nd	0.004	nd	nd	nd	nd	0.020	**0.035**
6	**30**	strip 07	0.012	nd	0.003	nd	nd	nd	nd	0.017	**0.029**
31	**30**	strip 02	0.018	nd	nd	nd	nd	nd	nd	**0.052**	**0.044**
31	**30**	strip 05	0.019	nd	nd	nd	nd	nd	nd	**0.057**	**0.048**
91	**30**	strip 03	0.017	nd	nd	nd	nd	nd	nd	**0.064**	**0.051**
91	**30**	strip 06	0.034	nd	nd	nd	nd	nd	nd	**0.067**	**0.055**
196	**30**	strip 08	**0.059**	nd	0.003	nd	nd	0.003	nd	**0.081**	**0.061**
196	**30**	strip 11	0.031	nd	0.002	nd	nd	0.003	nd	**0.066**	**0.050**
202	**30**	strip 09	0.025	nd	0.003	nd	nd	0.003	nd	**0.070**	**0.052**
202	**30**	strip 12	0.034	0.003	0.003	nd	nd	0.003	nd	**0.067**	**0.050**
0	**50**	strip A	0.039	nd	nd	nd	nd	nd	nd	nd	nd
0	**50**	strip B	0.041	nd	nd	nd	nd	nd	nd	nd	nd
1	**50**	strip 01	0.024	**0.020**	**0.018**	nd	nd	0.001	nd	**0.036**	**0.029**
1	**50**	strip 03	0.021	**0.019**	**0.014**	nd	nd	0.001	nd	**0.033**	**0.027**
6	**50**	strip 04	0.028	**0.022**	**0.016**	nd	nd	0.001	nd	**0.063**	**0.047**
6	**50**	strip 06	0.025	0.018	**0.015**	nd	nd	0.001	nd	**0.068**	**0.049**
31	**50**	strip 02	0.026	nd	nd	nd	nd	nd	nd	**0.170**	**0.120**
31	**50**	strip 05	0.020	nd	nd	nd	nd	nd	nd	**0.171**	**0.119**
91	**50**	strip 07	0.029	nd	nd	nd	nd	nd	nd	**0.201**	**0.155**
91	**50**	strip 10	0.014	nd	nd	nd	nd	nd	nd	**0.209**	**0.155**
175	**50**	strip 08	0.022	**0.021**	**0.014**	nd	nd	0.001	nd	**0.222**	**0.238**
175	**50**	strip 11	0.022	**0.021**	**0.013**	nd	nd	0.001	nd	**0.214**	**0.225**
273	**50**	strip 09	0.006	nd	0.002	nd	nd	0.005	nd	**0.155**	**0.242**
273	**50**	strip 10	nd	nd	0.004	nd	nd	0.005	nd	**0.151**	**0.236**
0	**43**	strip A	nd	nd	nd	nd	nd	nd	nd	nd	nd
0	**43**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
3	**43**	strip 01	nd	0.005	0.010	nd	nd	nd	nd	0.015	0.001
3	**43**	strip 03	0.023	0.016	**0.014**	nd	nd	nd	nd	0.018	0.002
6	**43**	strip 04	0.005	0.003	0.012	nd	nd	nd	nd	**0.023**	**0.031**

6	**43**	strip 06	0.035	0.004	**0.012**	nd	nd	nd	nd	**0.024**	**0.030**
31	**43**	strip 02	0.043	0.004	**0.041**	nd	nd	nd	nd	**0.073**	**0.044**
31	**43**	strip 05	0.055	0.004	**0.048**	nd	nd	nd	nd	**0.072**	**0.046**
91	**43**	strip 07	0.026	nd	nd	nd	nd	nd	nd	**0.100**	**0.063**
91	**43**	strip 10	0.027	nd	nd	nd	nd	nd	nd	**0.092**	**0.058**
182	**43**	strip 08	0.036	**0.035**	**0.032**	nd	nd	0.002	nd	**0.116**	**0.068**
182	**43**	strip 11	0.010	**0.032**	**0.033**	nd	nd	0.001	nd	**0.111**	**0.064**
266	**43**	strip 09	0.009	0.001	0.006	nd	nd	nd	nd	**0.091**	**0.063**
266	**43**	strip 12	0.024	0.009	0.005	nd	nd	nd	nd	**0.094**	**0.063**
0	**35**	strip A	0.004	0.009	nd	nd	nd	nd	nd	nd	nd
0	**35**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
1	**35**	strip 01	0.002	nd	0.003	nd	nd	0.003	nd	0.002	0.002
1	**35**	strip 03	0.011	0.003	0.003	nd	nd	0.002	nd	0.002	0.002
6	**35**	strip 04	0.014	nd	0.003	nd	nd	nd	nd	**0.039**	nd
6	**35**	strip 06	0.036	nd	0.003	nd	nd	nd	nd	**0.034**	nd
31	**35**	strip 02	0.047	nd	**0.037**	nd	nd	nd	nd	**0.047**	**0.040**
31	**35**	strip 05	0.045	nd	**0.039**	nd	nd	nd	nd	**0.047**	**0.041**
98	**35**	strip 07	0.009	0.009	0.010	nd	nd	0.002	nd	**0.027**	**0.023**
98	**35**	strip 10	0.002	0.007	0.011	nd	nd	0.002	nd	**0.026**	**0.021**
182	**35**	strip 08	0.025	0.003	0.003	nd	nd	0.003	nd	**0.060**	**0.055**
182	**35**	strip 11	0.014	0.004	0.003	nd	nd	0.003	nd	**0.057**	**0.052**
220	**35**	strip 09	0.045	0.004	0.003	nd	nd	0.003	nd	**0.058**	**0.054**
220	**35**	strip 12	0.016	0.003	0.003	nd	nd	**0.020**	nd	**0.052**	**0.049**
0	**10**	strip A	0.005	nd	nd	nd	nd	nd	nd	nd	nd
0	**10**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
1	**10**	strip 01	nd	0.008	**0.016**	nd	nd	0.002	nd	0.002	0.002
1	**10**	strip 03	0.032	0.007	0.003	nd	nd	0.003	nd	0.003	0.003
6	**10**	strip 04	0.015	nd	nd	nd	nd	0.001	nd	**0.047**	**0.046**
6	**10**	strip 06	0.022	nd	nd	nd	nd	0.000	nd	**0.041**	**0.042**
31	**10**	strip 02	0.040	nd	**0.034**	nd	nd	**0.032**	nd	**0.058**	**0.050**
31	**10**	strip 05	0.047	nd	**0.037**	nd	nd	**0.036**	nd	**0.057**	**0.050**
91	**10**	strip 07	0.004	0.006	0.012	nd	nd	0.001	nd	**0.061**	**0.054**
91	**10**	strip 10	0.006	0.008	**0.013**	nd	nd	0.001	nd	**0.059**	**0.052**
175	**10**	strip 08	0.004	0.004	0.003	nd	nd	0.002	nd	**0.095**	**0.090**
175	**10**	strip 11	0.009	0.004	0.004	nd	nd	0.002	nd	**0.103**	**0.098**
254	**10**	strip 09	0.022	0.002	**0.025**	nd	nd	0.002	nd	**0.069**	**0.067**
254	**10**	strip 12	0.029	**0.026**	**0.030**	nd	nd	0.002	nd	**0.074**	**0.074**
0	**59**	strip A	0.001	nd	nd	nd	nd	nd	nd	nd	nd
0	**59**	strip B	nd	nd	nd	nd	nd	nd	nd	nd	nd
1	**59**	strip 01	0.005	0.001	0.004	nd	nd	nd	nd	0.016	0.016
1	**59**	strip 04	0.001	0.001	0.007	nd	nd	nd	nd	0.002	0.002

6	**59**	strip 03	0.037	0.009	0.003	nd	nd	nd	nd	**0.048**	nd
6	**59**	strip 06	0.018	0.003	0.003	nd	nd	0.001	nd	**0.051**	nd
30	**59**	strip 02	0.046	nd	**0.037**	nd	nd	nd	nd	**0.061**	**0.036**
30	**59**	strip 05	0.045	nd	**0.037**	nd	nd	nd	nd	**0.062**	**0.036**
91	**59**	strip 07	0.004	0.013	**0.019**	nd	nd	0.002	nd	**0.098**	**0.025**
91	**59**	strip 10	0.003	0.012	**0.016**	nd	nd	0.002	nd	**0.091**	**0.023**
175	**59**	strip 08	0.010	0.003	0.003	nd	nd	0.003	nd	**0.128**	**0.055**
175	**59**	strip 11	0.027	0.003	0.002	nd	nd	0.002	nd	**0.124**	**0.052**
244	**59**	strip 09	0.024	0.003	**0.031**	nd	nd	0.002	nd	**0.107**	**0.047**
244	**59**	strip 12	0.024	**0.021**	**0.029**	nd	nd	0.002	nd	**0.106**	**0.047**
0	**01**	strip A	0.006	nd	nd	nd	nd	nd	nd	nd	nd
0	**01**	strip B	0.002	0.006	nd	nd	nd	nd	nd	nd	nd
1	**01**	strip 01	0.025	**0.023**	**0.019**	nd	nd	0.001	nd	**0.030**	0.001
1	**01**	strip 03	0.026	**0.024**	**0.017**	nd	nd	0.001	nd	**0.029**	0.001
6	**01**	strip 04	0.023	**0.020**	**0.018**	nd	nd	0.001	nd	**0.035**	0.001
6	**01**	strip 06	0.027	**0.021**	**0.019**	nd	nd	0.001	nd	**0.040**	0.001
31	**01**	strip 02	nd	0.006	**0.012**	nd	nd	nd	nd	**0.052**	0.016
31	**01**	strip 05	nd	0.007	0.012	nd	nd	nd	nd	**0.049**	0.014
84	**01**	strip 07	0.024	**0.019**	**0.015**	nd	nd	0.001	nd	**0.123**	**0.044**
84	**01**	strip 10	0.021	**0.014**	**0.012**	nd	nd	0.001	nd	**0.107**	**0.038**
175	**01**	strip 08	0.025	0.003	0.003	nd	nd	nd	nd	**0.185**	**0.072**
175	**01**	strip 11	0.026	nd	0.003	nd	nd	nd	nd	**0.171**	**0.068**
200	**01**	strip 09	0.056	**0.045**	**0.045**	nd	nd	0.002	nd	**0.164**	**0.077**
200	**01**	strip 12	**0.063**	nd	**0.050**	nd	nd	0.002	nd	**0.171**	**0.082**
0	**82**	strip A	0.020	nd	nd	nd	nd	0.003	nd	0.003	0.003
0	**82**	strip B	0.029	nd	nd	nd	nd	0.002	nd	0.002	0.002
1	**82**	strip 01	0.029	**0.025**	**0.031**	nd	nd	0.002	nd	**0.034**	0.003
1	**82**	strip 03	0.024	**0.024**	**0.025**	nd	nd	0.002	nd	**0.028**	0.002
6	**82**	strip 04	0.028	0.003	**0.032**	nd	nd	0.002	nd	**0.060**	0.003
6	**82**	strip 06	0.031	0.003	**0.029**	nd	nd	0.002	nd	**0.051**	0.002
32	**82**	strip 02	0.024	**0.027**	**0.028**	nd	nd	0.002	nd	**0.130**	**0.029**
32	**82**	strip 05	0.028	**0.027**	**0.032**	nd	nd	0.003	nd	**0.125**	**0.032**
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		MDL	0.059	0.018	0.012	0.006	0.006	0.007	0.008	0.021	0.017
		# detect >MDL	2	28	49	0	0	7	0	109	90

% detect >MDL	1%	20%	34%	0%	0%	5%	0%	76%	63%
median (all samples)	0.016	0.002	0.003	nd	nd	nd	nd	0.052	0.032
mean (all samples)	0.018	0.008	0.012	0.000	0.000	0.002	0.000	0.065	0.040
min (all samples)	nd	nd	nd	nd	nd	nd	nd	nd	nd
max (all samples)	0.063	0.090	0.108	nd	nd	0.036	nd	0.256	0.242

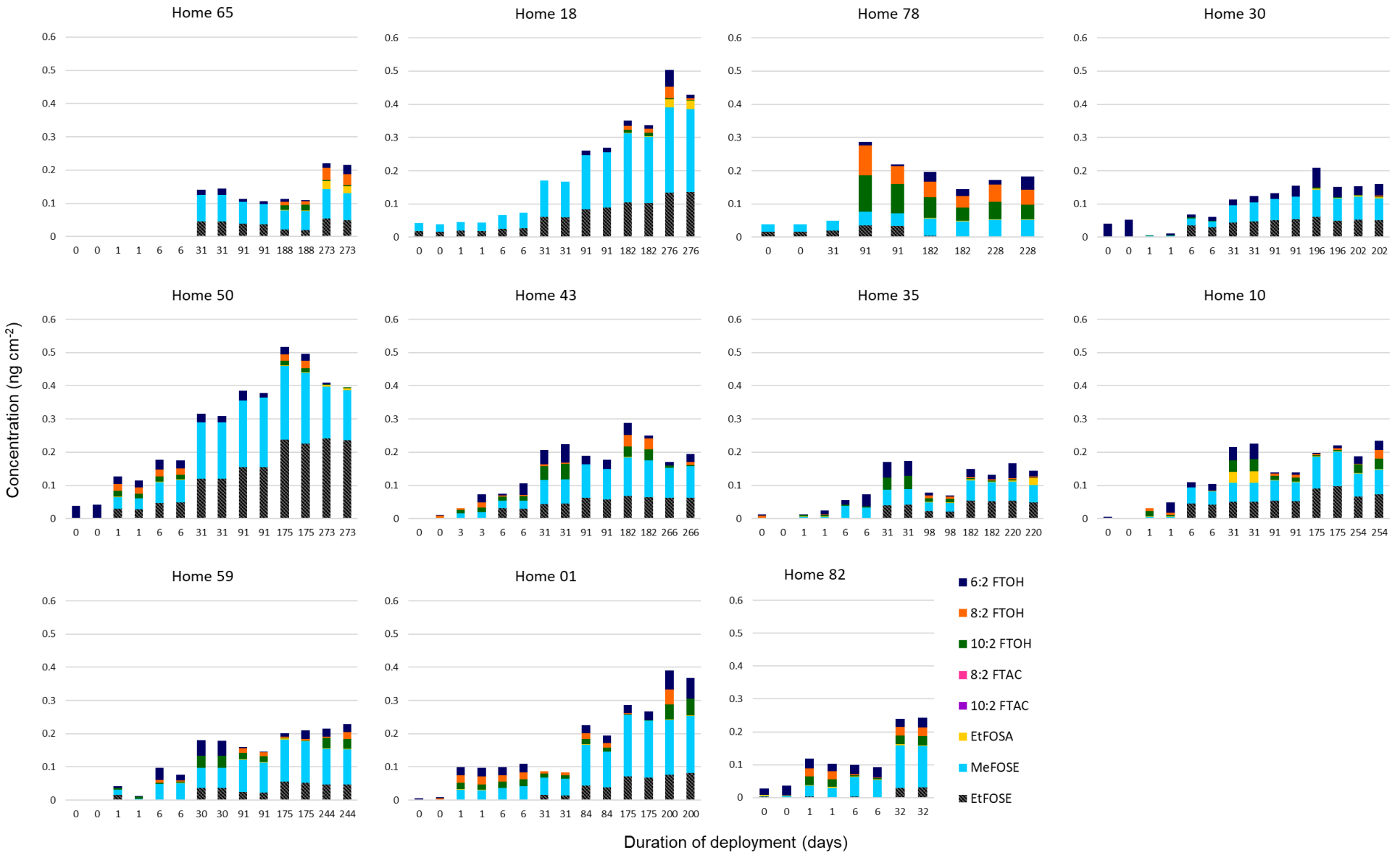

Figure S9: Concentration profiles of neutral PFAS in suspended cloth strips (Sampler A) over the duration of deployment at the IPA Campaign homes. If a duration of deployment is indicated, e.g., 1 day for Home 65, but no bar is shown, then a sample was collected but none of the analytes was detected. MeFOSA was not detected in any samples and is therefore not shown.

Section S6: Statistical analysis of total air and gas phase data

Concentrations of total-air samples were not significantly different (α = 0.05) from concentrations of gas-phase samples collected at the same home during the same sampling visit (*N* = 16) for any species except MeFOSE and EtFOSE (**Table S17**), consistent with the current understanding that neutral PFAS are predominantly in the gas phase. The significant difference may indicate that FOSEs partition to airborne particles, although adsorption to the sampling filter is also possible. Note that a paired t-test was used for species with a normal distribution and a Wilcoxon Signed-Rank test was used for those with a non-normal distribution (**Table S17**).

Table S17: Statistical comparison of total-air and gas-phase samples (α = 0.05). The analysis indicates that total-air and gas-phase concentrations are significantly different for MeFOSE and EtFOSE, but total-air and gas-phase concentrations are not significantly different for 6:2 FTOH, 8:2 FTOH, 10:2 FTOH, and EtFOSA

	Shapiro-Wilk normality test				**Paired t-Test for normally distributed data**	**Wilcoxon Signed- Rank Test for not-normally distributed data**	
	Total-air samples		**Gas-phase samples**				
Analyte	**SW test statistic**	**distribution**	**SW test statistic**	**distribution**	**p-value**	**critical value**	**test statistic**
6:2 FTOH	0.7849	not normal	0.8205	not normal	-	35	**60**
8:2 FTOH	0.7692	not normal	0.7871	not normal	-	35	**67**
10:2 FTOH	0.8940	normal	0.9336	normal	0.93	-	-
8:2 FTAC	0.2727	not normal	0.2727	not normal	-	NA	NA*
10:2 FTAC	0.2727	not normal	0.2727	not normal	-	NA	NA*
EtFOSA	0.7465	not normal	0.8054	not normal	-	21	**40**
MeFOSA	NA*	NA	NA*	NA	-	-	-
MeFOSE	0.5139	not normal	0.7282	not normal	-	**35**	0
EtFOSE	0.9104	normal	0.9322	normal	**0.008**	-	-

*not detected in any of the samples

Table S18: Estimated characteristic time τ and measured equilibration time of neutral PFAS in cloth strips. τ is calculated as a function of K_{oa}, the cloth thickness, and the deposition velocity v_d.[27] v_d can vary based on the geometry of the object and environmental conditions, but is typically assumed to be in the range of 1-10 m h^{-1}.[27-29] Weschler and Nazaroff (2008) used v_d = 3 m h^{-1}.[27]

Analyte	Characteristic time to reach equilibrium based on air concentrations (h)		Average time range to reach equilibrium based on accumulation rates (h)
	For v_d = 1-10 m h^{-1}	For v_d = 3 m h^{-1}	
6:2 FTOH	12-1.2	3.8	<28
8:2 FTOH	36-3.6	12	28-143
10:2 FTOH	92-9.2	31	28-143
8:2 FTAC	232.3	7.7	-
10:2 FTAC	46-4.6	15	-
MeFOSA	183-18	61	-
EtFOSA	289-29	96	28-143
MeFOSE	2299-230	766	4349-5846
EtFOSE	4587-459	1529	4349-5846

Table S19: Cloth-air partition coefficients as log(K_{ca}) for six neutral PFAS (3 months, 6 months, and overall average)

Home ID	Time	6:2 FTOH	8:2 FTOH	10:2 FTOH	EtFOSA	MeFOSE	EtFOSE
65	t=3mo	4.16	-	-	-	6.46	6.80
18	t=3mo	4.36	-	-	-	6.47	6.72
78	t=3mo	3.98	5.02	5.69		6.47	6.43
30	t=3mo	4.95	-	-	-	6.63	6.73
50	t=3mo	5.30	-	-	-	6.77	6.95
43	t=3mo	4.41	-	-	-	6.50	6.54
35	t=3mo	4.37	5.05	5.51	5.69	6.17	6.16
10	t=3mo	3.91	4.52	5.21	5.11	6.70	6.47
59	t=3mo	4.39	4.59	5.18	5.06	6.45	6.01
01	t=3mo	-	-	-	-	-	-
65	t=6mo	4.19	4.70	5.42	-	6.39	6.17
18	t=6mo	5.05	5.18	5.62	5.12	6.94	6.88
78	t=6mo	5.11	5.29	6.07	-	6.61	5.38
30	t=6mo	5.41	-	4.96	-	-	-
50	t=6mo	5.92	5.51	5.78	5.23	7.06	7.24
43	t=6mo	4.06	4.84	5.36	-	6.48	6.36
35	t=6mo	4.78	4.22	4.58	6.01	7.71	7.69
10	t=6mo	4.16	4.42	4.66	6.14	6.76	7.62
59	t=6mo	5.09	3.93	4.27	7.70	6.58	6.65
01	t=6mo	4.80	3.72	4.37	-	6.57	6.62
median		4.41	4.70	5.28	5.46	6.58	6.63
mean		4.65	4.69	5.19	5.76	6.65	6.63
std dev		0.55	0.51	0.53	0.84	0.33	0.54

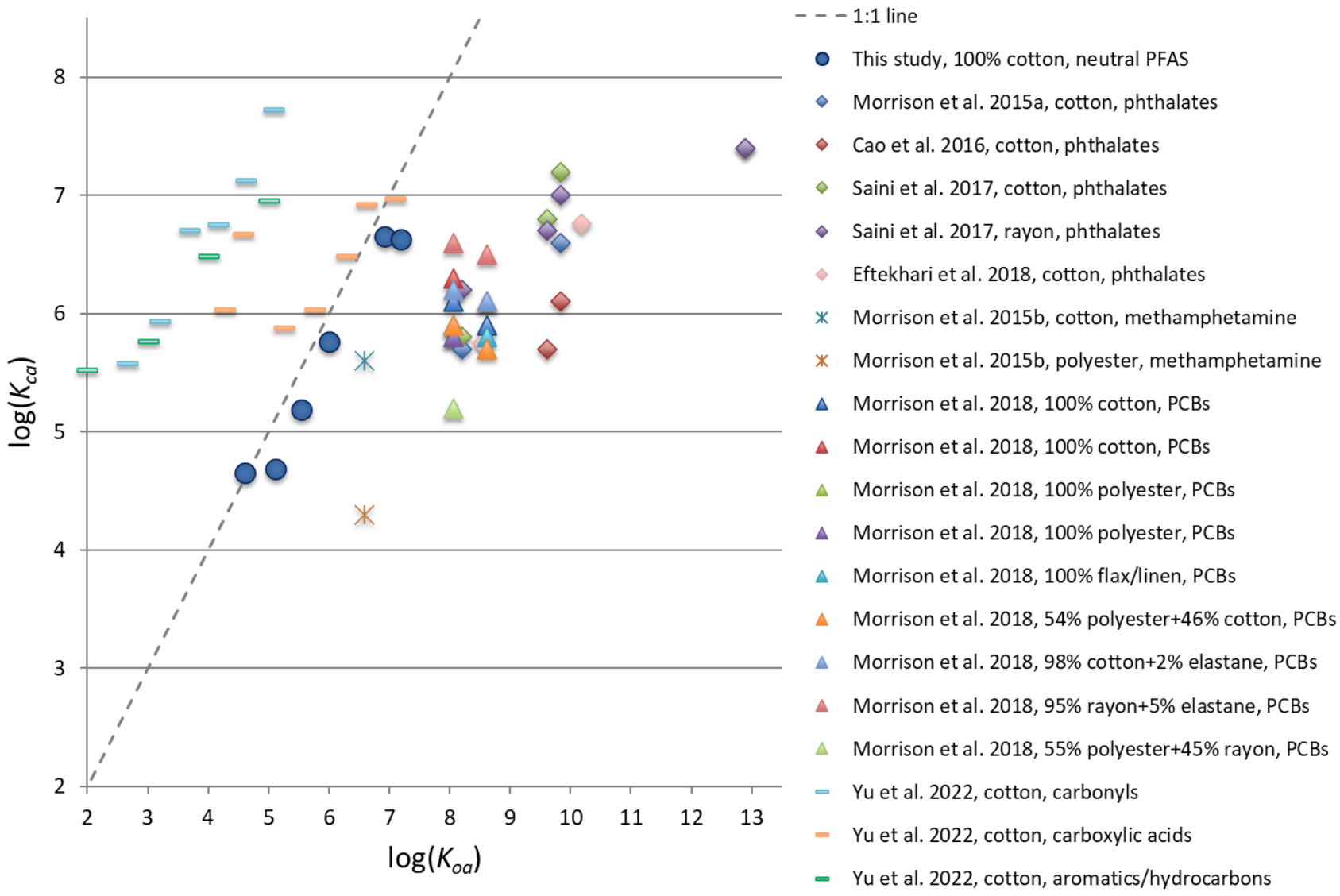

Figure S10: Log(K_{ca}) of PFAS and different SVOCs over log(K_{oa}).[30-36] Adapted from Morrison et al. 2018 (SI)[35].

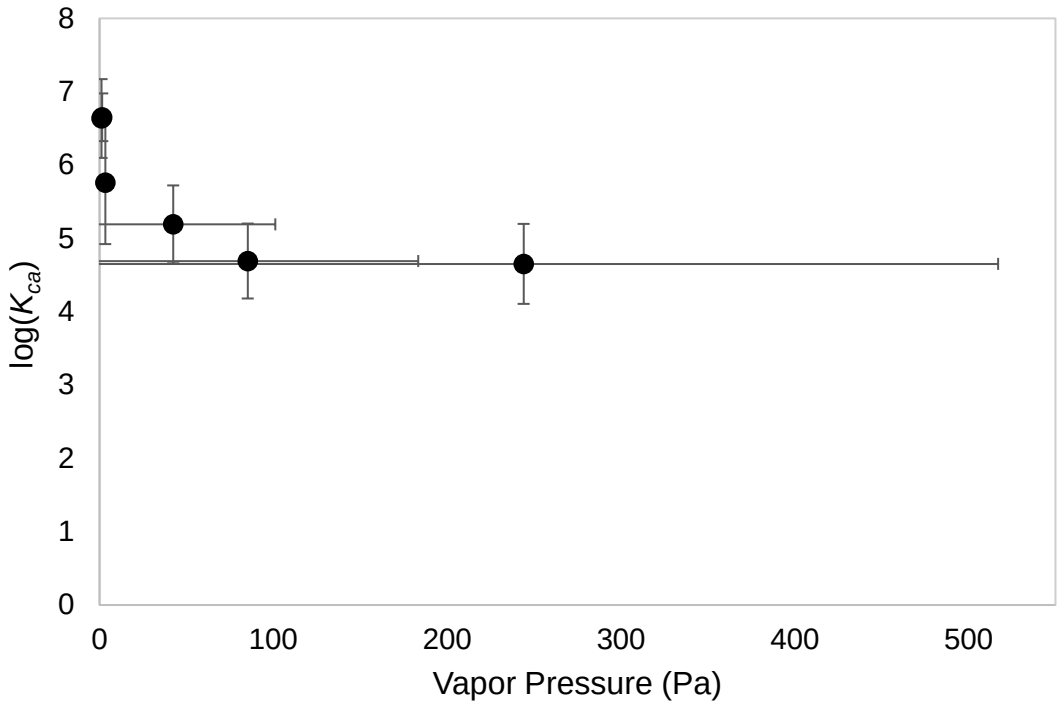

Figure S11: log(K_{ca}) and vapor pressure (means and standard deviations, see **Table S4**).

Section S7: Temperature-dependence of log(K_{ca})

Eftekhari et al.[33] investigated cloth-air partitioning of two phthalates, diethyl phthalate (DEP) and di-n-butyl phthalate (DnBP), to cotton cloth at varying temperatures and observed a decrease of K_{ca} with increasing temperature. For example, K_{ca} (reported as K_{vol}) of DnBP decreased from 570,000 at 20°C to 50,000 at 40°C.[33] This indicates that at higher temperatures, a larger fraction of the compound is in the air, while at lower temperatures, more of the compound partitions to the cloth. We used several averaging times for the temperatures in the analysis, acknowledging that there are differences between species in the times to cloth-air equilibration (**Table S18**): 24-hour, 3-day, or 1-month average prior to sampling. Although the temperature range measured in the IPA Campaign homes is narrower than the range used in the experiments by Eftekhari et al.[33] and correlations are modest, the same trend can be observed for most neutral PFAS (**Figure S12**). Similar to Eftekhari et al.[33], log(K_{ca}) decreases with increasing temperature for the FTOHs and FOSEs for all temperature averages. In contrast, for EtFOSA, log(K_{ca}) increases with increasing temperature (**Figure S12C**). This may hint at a different type of source for EtFOSA compared to the FTOHs and FOSEs. For 6:2 FTOH, the coefficient of determination (R^2) is highest for the correlation between log(K_{ca}) and the 1-month average temperature. For 8:2 FTOH and especially for 10:2 FTOH, R^2 is highest for log(K_{ca}) and the 3-day average temperature, and for the FOSEs and EtFOSA, R^2 is highest for log(K_{ca}) and the 24-hour average temperature. In general, the FOSEs showed the strongest correlation with temperature, with coefficients of determination (R^2) of 0.54 and 0.22 for MeFOSE and EtFOSE, respectively, which were also found to be significant ($\alpha = 0.05$). **Figure S13** further shows the relationship between log(K_{ca}) and the reciprocal absolute temperature, which can be described by the Van 't Hoff relationship.

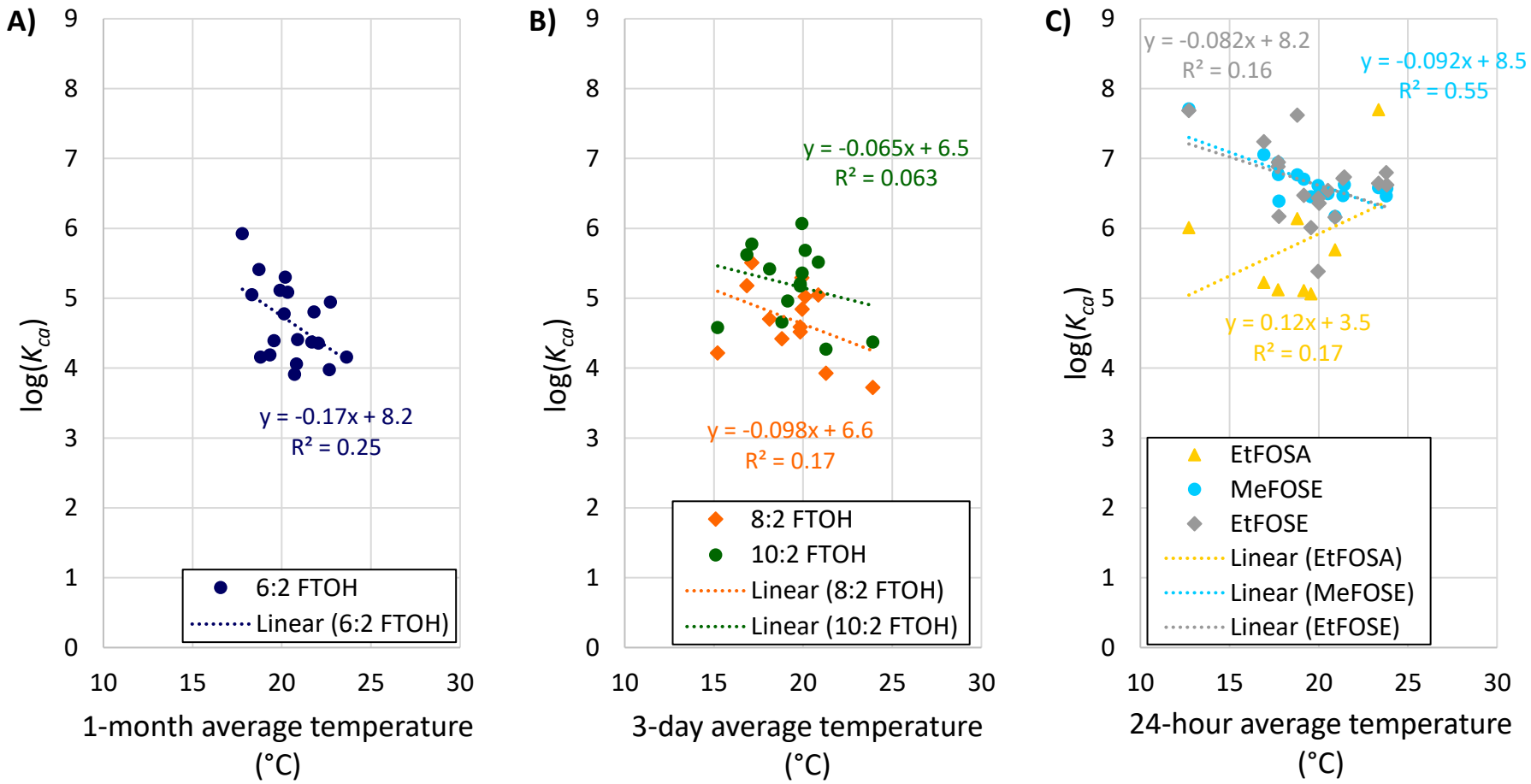

Figure S12: The equilibrium cloth-air partition coefficient log(K_{ca}) and average temperature (1-month, 3-day and 24-hour averages) for A) 6:2 FTOH, B) 8:2 FTOH and 10:2 FTOH, and C) EtFOSA, MeFOSE, and EtFOSE.

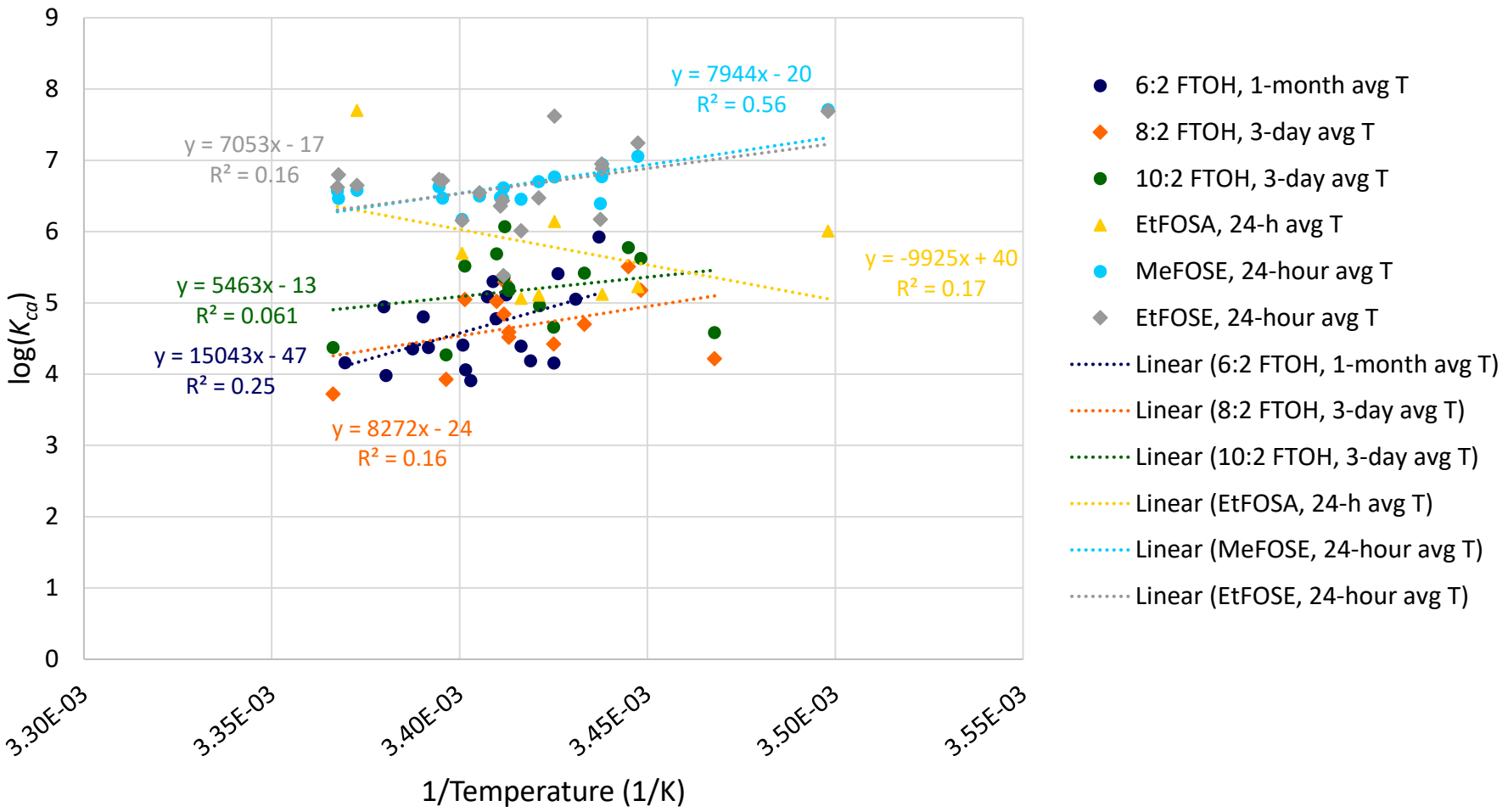

Figure S13: The equilibrium cloth-air partition coefficient log(K_{ca}) and the reciprocal absolute temperature (1-month, 3-day and 24-hour averages) for 6:2 FTOH, 8:2 FTOH, 10:2 FTOH, EtFOSA, MeFOSE, and EtFOSE.

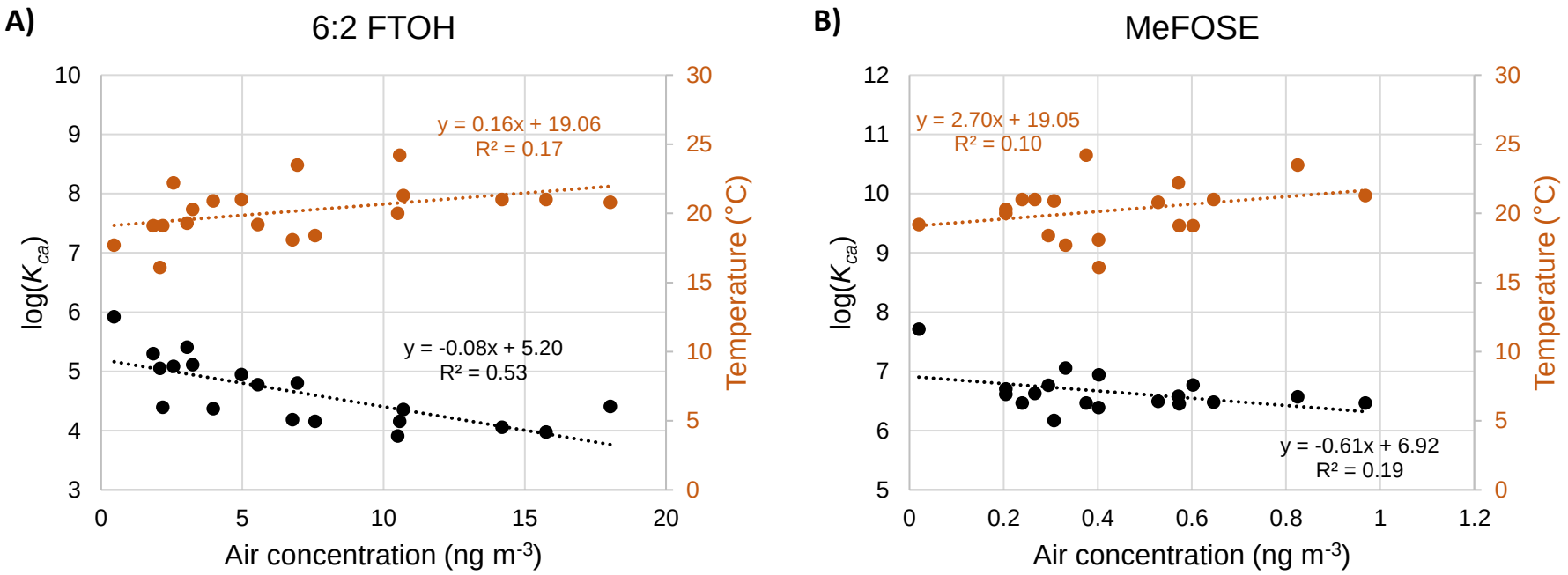

Figure S14: Examples of the relationship between log(K_{ca}) and the air concentration of A) 6:2 FTOH and B) MeFOSE in comparison to the average temperature during air sampling (°C) vs. the respective air concentration. The observed correlation of log(K_{ca}) with the air concentrations can be explained by the dependence of both the air concentration and log(K_{ca}) of the temperature. Higher temperatures result in smaller partition coefficients and higher air concentrations, as partitioning is shifted to the gas phase.

Table S20: Neutral PFAS in folded cloth piece samples (Sampler B). N = 91 samples, including 18 duplicates. "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0

Duration of deployment (days)	Home ID	Sample ID	Folded Cloth Piece Concentration (ng cm^{-2})								
			6:2 FTOH	8:2 FTOH	10:2 FTOH	8:2 FTAC	10:2 FTAC	EtFOSA	MeFOSA	MeFOSE	EtFOSE
0	**65**	A	0.014	**0.016**	nd	nd	nd	nd	nd	nd	nd
1	**65**	A	0.022	**0.018**	**0.020**	nd	nd	2.6E-04	nd	**0.021**	2.8E-04
6	**65**	A	0.024	**0.015**	**0.018**	nd	nd	nd	nd	**0.019**	nd
31	**65**	A	0.057	**0.017**	**0.020**	nd	nd	2.9E-04	nd	**0.033**	**0.020**
91	**65**	A	0.025	**0.015**	**0.017**	nd	nd	3.7E-04	nd	**0.026**	3.5E-04
188	**65**	A	0.025	**0.016**	**0.018**	nd	nd	1.7E-04	nd	**0.047**	**0.022**
273	**65**	A	0.047	0.002	0.013	nd	nd	nd	nd	**0.015**	0.001
0	**18**	A	0.028	**0.027**	nd	nd	nd	nd	nd	0.010	3.2E-04
0	**18**	B	0.012	nd	nd	nd	nd	0.003	nd	**0.020**	0.001
1	**18**	A	0.024	0.002	0.014	nd	nd	nd	nd	**0.016**	**0.009**
1	**18**	B	0.013	0.003	**0.023**	nd	nd	**0.007**	nd	**0.037**	0.001
6	**18**	A	0.027	0.002	0.016	nd	nd	0	nd	**0.026**	**0.011**
6	**18**	B	0.018	0.003	**0.023**	nd	nd	**0.007**	nd	**0.037**	**0.023**
31	**18**	A	0.010	nd	**0.016**	nd	nd	0.002	nd	**0.069**	**0.016**
31	**18**	B	0.023	0.003	**0.027**	nd	nd	**0.011**	nd	**0.123**	**0.038**
91	**18**	A	0.046	0.002	0.013	nd	nd	nd	nd	**0.071**	**0.015**
91	**18**	B	0.034	0.004	**0.029**	nd	nd	**0.015**	nd	**0.096**	**0.035**
182	**18**	A	0.059	**0.018**	**0.018**	nd	nd	nd	nd	**0.083**	**0.016**
182	**18**	B	0.024	0.003	**0.025**	nd	nd	**0.009**	nd	**0.126**	**0.036**
276	**18**	A	0.033	**0.015**	0.015	nd	nd	0	nd	**0.141**	**0.031**
276	**18**	B	0.028	0.002	**0.020**	nd	nd	0.003	nd	**0.114**	**0.031**
0	**78**	A	0.074	nd	nd	nd	nd	nd	nd	nd	nd
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**78**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	**78**	A	0.065	**0.013**	0.010	nd	nd	nd	nd	0.003	nd
31	**78**	A	0.042	0.004	0.002	nd	nd	nd	nd	0.003	nd
91	**78**	A	0.055	0.003	0.008	nd	nd	nd	nd	0.003	nd
182	**78**	A	0.041	0.002	0.002	nd	nd	nd	nd	0.002	nd
228	**78**	A	0.067	0.002	0.011	nd	nd	nd	nd	1.3E-04	1.3E-04
0	**30**	A	0.022	nd	0.002	nd	nd	2.7E-04	nd	3.3E-04	3.3E-04
1	**30**	A	0.034	**0.025**	**0.024**	nd	nd	0.001	nd	**0.028**	0.001
6	**30**	A	0.035	**0.021**	**0.025**	nd	nd	0.001	nd	**0.044**	**0.029**
31	**30**	A	nd	**0.014**	**0.019**	nd	nd	nd	nd	**0.052**	**0.028**
91	**30**	A	0.014	0.002	0.002	nd	nd	4.3E-04	nd	**0.051**	**0.024**

196	**30**	A	0.050	0.002	0.002	nd	nd	0.001	nd	**0.062**	**0.022**
202	**30**	A	**0.241**	**0.017**	**0.019**	nd	nd	nd	nd	**0.065**	**0.035**
0	**50**	A	0.009	nd	nd	nd	nd	0.001	nd	0.001	0.001
1	**50**	A	0.018	0.002	0.002	nd	nd	4.3E-04	nd	**0.029**	**0.026**
6	**50**	A	0.014	0.002	0.002	nd	nd	**0.018**	nd	**0.076**	**0.049**
31	**50**	A	0.014	0.002	0.002	nd	nd	nd	nd	**0.061**	**0.050**
91	**50**	A	0.020	0.002	0.003	nd	nd	0.001	nd	**0.070**	**0.068**
175	**50**	A	0.017	0.003	0.003	nd	nd	0.001	nd	**0.075**	**0.070**
273	**50**	A	0.037	0.002	0.013	nd	nd	nd	nd	**0.057**	**0.046**
0	**43**	A	0.010	nd	nd	nd	nd	3.0E-04	nd	4.1E-04	4.1E-04
3	**43**	A	0.018	0.003	0.003	nd	nd	4.8E-04	nd	**0.027**	0.001
6	**43**	A	0.018	0.003	0.002	nd	nd	1.4E-04	nd	**0.026**	**0.022**
31	**43**	A	0.015	0.000	0.002	nd	nd	1.6E-04	nd	**0.035**	**0.025**
91	**43**	A	0.017	0.002	0.002	nd	nd	3.9E-04	nd	**0.035**	**0.027**
182	**43**	A	0.013	0.002	0.002	nd	nd	**0.014**	nd	**0.037**	**0.027**
266	**43**	A	0.054	0.004	0.003	nd	nd	nd	nd	**0.024**	**0.017**
266	**43**	B	0.030	0.002	0.002	nd	nd	0.001	nd	**0.015**	**0.009**
0	**35**	A	0.009	nd	nd	nd	nd	0.001	nd	5.0E-04	5.0E-04
1	**35**	A	0.013	0.002	**0.029**	nd	nd	0.001	nd	4.9E-04	4.9E-04
6	**35**	A	0.013	0.002	**0.027**	nd	nd	0.001	nd	0.011	4.7E-04
31	**35**	A	0.013	0.002	**0.024**	nd	nd	1.7E-04	nd	0.011	**0.004**
98	**35**	A	0.017	0.002	**0.029**	nd	nd	4.1E-04	nd	**0.016**	**0.006**
182	**35**	A	0.013	0.002	**0.025**	nd	nd	nd	nd	**0.013**	**0.006**
220	**35**	A	0.060	0.002	0.009	nd	nd	nd	nd	**0.015**	**0.009**
220	**35**	B	0.019	0.002	0.002	nd	nd	0.001	nd	**0.013**	**0.006**
0	**10**	A	0.025	0.007	0.009	nd	nd	nd	nd	0.001	0.001
0	**10**	B	0.012	nd	nd	nd	nd	0.003	nd	4.7E-04	4.7E-04
1	**10**	A	0.043	0.003	**0.017**	nd	nd	nd	nd	0.001	0.001
1	**10**	B	0.015	0.003	**0.021**	nd	nd	0.005	nd	**0.029**	**0.029**
6	**10**	A	0.040	0.003	**0.017**	nd	nd	nd	nd	**0.048**	**0.071**
6	**10**	B	0.025	0.003	**0.026**	nd	nd	**0.009**	nd	**0.037**	**0.031**
31	**10**	A	0.039	0.003	0.003	nd	nd	nd	nd	**0.041**	**0.051**
31	**10**	B	0.037	0.004	nd	nd	nd	**0.011**	nd	**0.051**	**0.063**
91	**10**	A	0.035	0.004	0.003	nd	nd	nd	nd	**0.029**	**0.027**
91	**10**	B	0.023	0.004	nd	nd	nd	**0.012**	nd	**0.063**	**0.087**
175	**10**	A	0.041	0.003	0.003	nd	nd	nd	nd	**0.048**	**0.072**
175	**10**	B	0.023	nd	nd	nd	nd	0.004	nd	**0.051**	**0.077**
254	**10**	A	0.032	0.004	0.004	nd	nd	nd	nd	**0.033**	**0.042**
254	**10**	B	0.021	nd	nd	nd	nd	0.005	nd	**0.035**	**0.046**
0	**59**	A	0.009	nd	nd	nd	nd	1.4E-04	nd	1.6E-04	1.6E-04

1	**59**	A	0.016	0.002	**0.028**	nd	nd	1.9E-04	nd	0.007	1.8E-04
6	**59**	A	0.018	0.003	**0.038**	nd	nd	0.001	nd	**0.018**	**0.006**
30	**59**	A	nd	0.002	**0.032**	nd	nd	4.6E-04	nd	**0.035**	**0.009**
91	**59**	A	0.020	0.002	**0.032**	nd	nd	0.001	nd	**0.030**	**0.009**
175	**59**	A	0.018	0.002	**0.027**	nd	nd	2.1E-04	nd	**0.039**	**0.011**
244	**59**	A	0.032	**0.016**	**0.018**	nd	nd	nd	nd	**0.058**	**0.023**
0	**01**	A	0.016	nd	nd	nd	nd	0.001	nd	0.002	0.002
1	**01**	A	0.022	**0.140**	**0.155**	nd	nd	0.001	nd	**0.012**	0.002
6	**01**	A	0.048	**0.162**	**0.194**	nd	nd	0.001	nd	**0.016**	**0.007**
6	**01**	B	0.016	**0.151**	**0.187**	nd	nd	0.002	nd	**0.020**	**0.007**
31	**01**	A	0.007	**0.434**	**0.616**	nd	nd	0.001	nd	**0.026**	**0.012**
84	**01**	A	0.018	**0.366**	**0.414**	0.003	nd	0.001	nd	**0.029**	**0.014**
175	**01**	A	0.021	**0.116**	**0.120**	nd	nd	0.001	nd	**0.044**	**0.015**
200	**01**	A	0.020	**0.526**	**0.647**	0.003	nd	0.001	nd	**0.043**	**0.017**
200	**01**	B	0.024	**0.039**	**0.059**	nd	nd	**0.019**	nd	**0.028**	**0.012**
0	**82**	A	0.077	nd	nd	nd	nd	nd	nd	0.002	nd
1	**82**	A	nd	0.007	0.012	nd	nd	0.002	nd	**0.053**	**0.007**
6	**82**	A	0.086	0.007	0.010	nd	nd	nd	nd	**0.053**	0.003
32	**82**	A	0.030	0.006	0.010	nd	nd	nd	nd	**0.241**	**0.009**
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	**82**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		MDL	0.112	0.010	0.016	0.005	0.006	0.007	0.007	0.012	0.003
		# detect >MDL	1	23	40	0	0	11	0	69	60
		% detect >MDL	1%	16%	27%	0%	0%	8%	0%	47%	41%
		median (all samples)	0.023	0.003	0.013	nd	nd	nd	nd	0.029	0.011
		mean (all samples)	0.030	0.026	0.037	0.000	0.000	0.002	0.000	0.036	0.018
		min (all samples)	nd	nd	nd	nd	nd	nd	nd	nd	nd
		max (all samples)	0.241	0.526	0.647	0.003	nd	0.019	nd	0.241	0.087

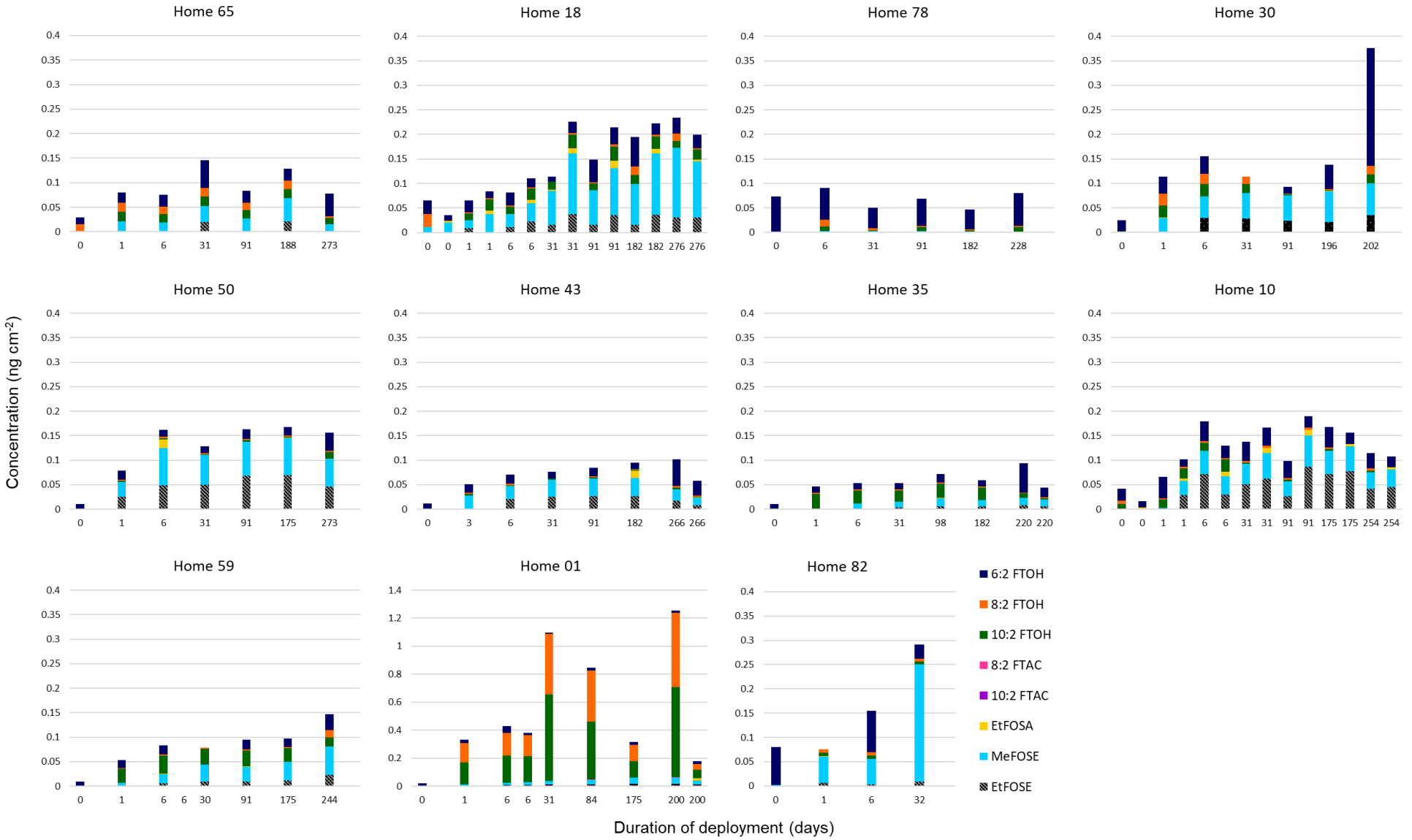

Figure S15: Concentration profiles of neutral PFAS in folded cloth pieces (Sampler B) over the duration of deployment at the IPA Campaign homes. Note that the y-axis scale for Home 01 is different from those of the other homes. MeFOSA was not detected in any samples and is therefore not shown.

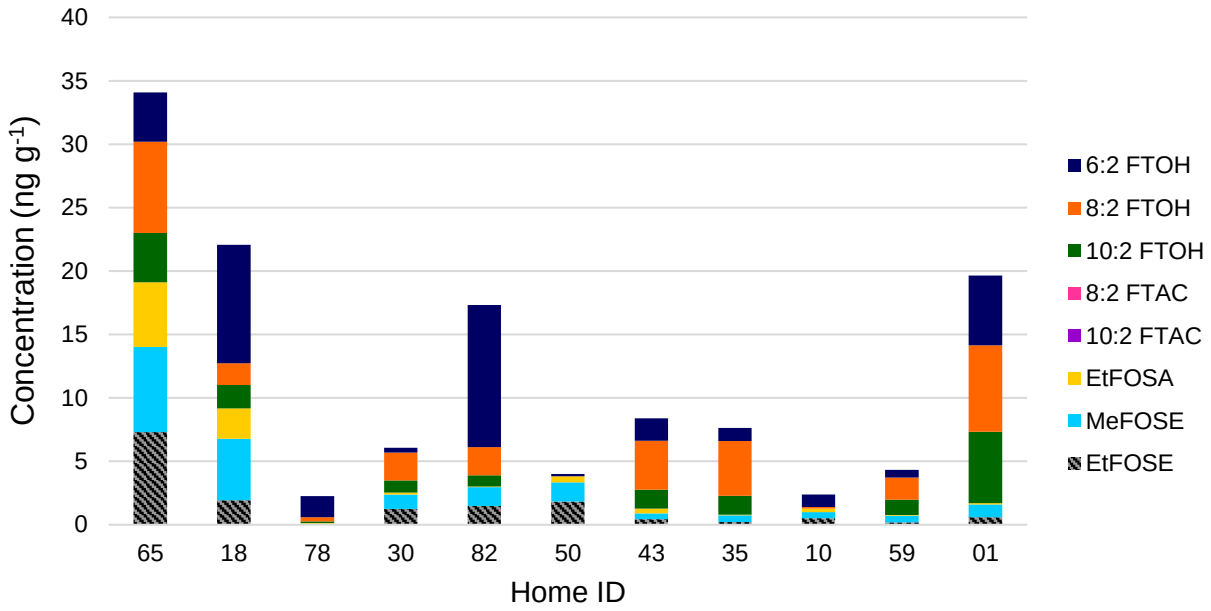

Figure S16: Mass-based concentration profiles of neutral PFAS in cotton clothing from the IPA Campaign homes. MeFOSA was not detected in any samples and is therefore not shown.

Table S21: Mass-based concentrations of neutral PFAS in household cotton clothing items. * indicates 6:2 FTOH concentrations that are not recovery corrected. "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0

	Household Clothing Concentration (ng g^{-1})								
Home ID	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
65	**3.9***	**7.2**	**3.9**	nd	nd	**5.1**	nd	**6.7**	**7.3**
18	**9.3**	**1.7**	**1.8**	nd	nd	**2.4**	nd	**4.8**	**1.9**
78	**1.7***	0.32	0.12	nd	nd	0.048	nd	0.047	0.047
30	**0.37***	**2.2**	**0.98**	nd	nd	0.13	nd	**1.1**	**1.2**
82	**11.2**	**2.2**	**0.89**	nd	nd	0.059	nd	**1.5**	**1.5**
50	0.19*	nd	nd	nd	nd	0.48	nd	**1.5**	**1.8**
43	**1.8***	**3.9**	**1.5**	nd	nd	0.38	nd	**0.45**	**0.43**
35	**1.0**	**4.3**	**1.5**	nd	nd	0.070	nd	**0.51**	**0.22**
10	**0.98**	0.12	nd	nd	nd	0.29	nd	**0.49**	**0.50**
59	**0.61***	**1.7**	**1.2**	nd	nd	0.056	nd	**0.52**	**0.20**
01	**5.5**	**6.8**	**5.6**	nd	nd	0.087	nd	**1.0**	**0.60**
MDL	0.36	0.47	0.53	0.42	0.47	0.54	0.58	0.13	0.13
# detect >MDL	10	8	8	0	0	2	0	10	10
% detect >MDL	91%	73%	73%	0%	0%	18%	0%	91%	91%
median (all samples)	1.668	2.195	1.213	nd	nd	0.130	nd	1.004	0.601
mean (all samples)	3.319	2.775	1.594	0.000	0.000	0.827	0.000	1.701	1.437
min (all samples)	0.192	nd	nd	nd	nd	0.048	nd	0.047	0.047
max (all samples)	11.205	7.195	5.643	nd	nd	5.096	nd	6.724	7.308

Table S22: Area-based concentrations of neutral PFAS in household cotton clothing items. * indicates 6:2 FTOH concentrations that are not recovery corrected. "nd" = not detected. Results >MDL are printed in bold. For calculation of means and standard deviations, nd was replaced by 0

	Household Clothing Concentration (ng cm^{-2})								
Home ID	**6:2 FTOH**	**8:2 FTOH**	**10:2 FTOH**	**8:2 FTAC**	**10:2 FTAC**	**EtFOSA**	**MeFOSA**	**MeFOSE**	**EtFOSE**
65	**0.045***	**0.084**	**0.045**	nd	nd	**0.060**	nd	**0.079**	**0.085**
18	**0.179**	**0.033**	**0.035**	nd	nd	**0.046**	nd	**0.093**	**0.037**
78	**0.029***	**0.006**	0.002	nd	nd	0.001	nd	0.001	0.001
30	**0.008***	**0.046**	**0.020**	nd	nd	0.003	nd	**0.024**	**0.026**
82	**0.244**	**0.049**	**0.019**	nd	nd	0.001	nd	**0.032**	**0.032**
50	0.002	nd	nd	nd	nd	**0.006**	nd	**0.018**	**0.022**
43	**0.032***	**0.071**	**0.027**	nd	nd	**0.007**	nd	**0.008**	**0.008**
35	**0.016**	**0.070**	**0.024**	nd	nd	0.001	nd	**0.008**	**0.003**
10	**0.017**	0.002	nd	nd	nd	0.005	nd	**0.008**	**0.009**
59	**0.019***	**0.054**	**0.038**	nd	nd	0.002	nd	**0.016**	**0.006**
01	**0.256**	**0.318**	**0.263**	nd	nd	0.004	nd	**0.047**	**0.028**
MDL	0.003	0.004	0.005	0.004	0.005	0.005	0.006	0.001	0.001
# detect >MDL	10	9	8	0	0	4	0	10	10
% detect >MDL	91%	82%	73%	0%	0%	36%	0%	91%	91%
median (all samples)	0.029	0.049	0.024	nd	nd	0.004	nd	0.018	0.022
mean (all samples)	0.077	0.066	0.043	0.000	0.000	0.012	nd	0.030	0.023
min (all samples)	0.002	nd	nd	nd	nd	0.001	nd	0.001	0.001
max (all samples)	0.256	0.318	0.263	nd	nd	0.060	nd	0.093	0.085

Section S8: Additional details about the clothing items analyzed for PFAS

Clothing items were not always stored in the same drawer, stack, or even in the same room as the folded cloth pieces. The clothing items from Home 18 and 82 had been stored in plastic containers in the homes for an extended period of time, prior to the IPA Campaign and their donation for extraction. The clothing items from Homes 30, 35, and 59 were kept in the same dresser as the folded cloth, but in different drawers. As indicated before, even small changes in the proximity to PFAS sources in a dresser drawer can alter the resulting PFAS concentration profile in the clothing material significantly. Although the clothing items were all 100% cotton, it is not known what kind of surface treatments the fabrics may have undergone as part of their manufacture and processing. Surface treatments can have an effect on the hygroscopicity of the cotton fibers, which will in turn affect cloth-air partitioning of PFAS, making some fibers more sorptive for certain PFAS. Additionally, the clothing items have been laundered with different kinds of detergent and their long-term purchase and storage history is not known. It is likely that several, or all of these factors, contributed to the differences in measured PFAS concentration profiles between the clothing items and the folded cloth.

Table S23: Variability of neutral PFAS in total air and gas phase samples across and within homes. AHV: Across-home variability, WHV: Within-home variability. Bold print indicates the larger of AHV and WHV

	Total-air samples				Gas-phase samples			
Analyte	AHV (pooled std. dev., ng m^{-3})	Coefficient of variation (%)	WHV (pooled std. dev., ng m^{-3})	Coefficient of variation (%)	AHV (pooled std. dev., ng m^{-3})	Coefficient of variation (%)	WHV (pooled std. dev., ng m^{-3})	Coefficient of variation (%)
6:2 FTOH	10	78%	12	**94%**	7.7	73%	11	**101%**
8:2 FTOH	13	84%	23	**150%**	11	84%	18	**139%**
10:2 FTOH	1.5	67%	1.9	**89%**	1.3	70%	1.48	**78%**
8:2 FTAC	0.29	159%	0.55	**307%**	0.19	314%	0.19	**317%**
10:2 FTAC	0.10	184%	0.19	**334%**	0.076	311%	0.081	**332%**
MeFOSA	0	NA	0	NA	0	NA	0.00	NA
EtFOSA	0.11	106%	0.12	**113%**	0.10	124%	0.15	**178%**
MeFOSE	0.82	**138%**	0.22	37%	0.35	**94%**	0.20	52%
EtFOSE	0.081	42%	0.14	**74%**	0.10	75%	0.16	**115%**

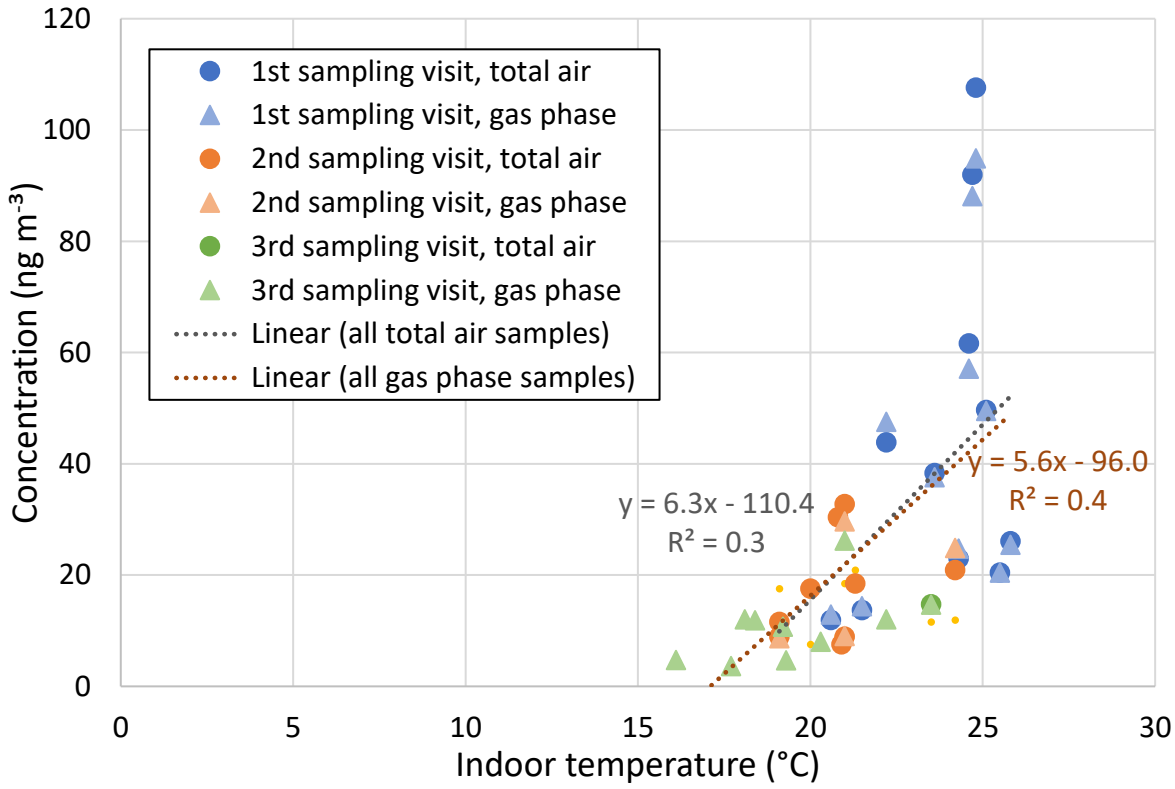

Figure S16: Concentrations of neutral PFAS in air during the first, second, and third sampling visits and average indoor temperature during sampling.

Table S24: Spearman rank correlation coefficients for neutral PFAS measured in total air with other neutral PFAS species, building characteristics, and environmental conditions.

	6:2 FTOH	8:2 FTOH	10:2 FTOH	8:2 FTAC	10:2 FTAC	EtFOSA	MeFOSA	MeFOSE	EtFOSE	∑(neutral PFAS)_air	∑(FTOHs)_air	∑(FOSEs)_air	Avg indoor T (°C)	Avg indoor RH (%)	Avg outdoor T (°C)	Avg outdoor RH (%)	ΔT (indoor-outdoor) (°C)	ACH (h^{-1})	Window opening (#)	T I/O ratio	RH I/O ratio	Building volume V (m^3)	Home age (yrs)	Occupants (#)	Pets (#)	Flooring type in main living area*
6:2 FTOH	1.000																									
8:2 FTOH	0.664	1.000																								
10:2 FTOH	0.592	0.704	1.000																							
8:2 FTAC	-0.086	-0.345	-0.053	1.000																						
10:2 FTAC	-0.027	-0.288	0.015	0.977	1.000																					
EtFOSA	0.008	0.131	0.065	0.426	0.454	1.000																				
MeFOSA	NA	NA	NA	NA	NA	NA	NA																			
MeFOSE	0.157	0.023	0.283	-0.151	-0.181	-0.146	NA	1.000																		
EtFOSE	-0.264	-0.510	-0.109	0.514	0.508	0.378	NA	0.392	1.000																	
∑(neutral PFAS)	0.830	0.925	0.803	-0.249	-0.187	0.070	NA	0.099	-0.408	1.000																
∑(FTOHs)	0.836	0.922	0.787	-0.249	-0.187	0.076	NA	0.066	-0.438	0.997	1.000															
∑(FOSEs)	0.091	-0.096	0.190	0.064	0.036	-0.033	NA	0.948	0.564	-0.001	-0.038	1.000														
Avg indoor T (°C)	0.452	0.687	0.374	-0.573	-0.569	-0.217	NA	-0.055	-0.598	0.660	0.665	-0.178	1.000													
Avg indoor RH (%)	0.284	0.168	0.082	-0.284	-0.220	-0.202	NA	-0.001	-0.218	0.192	0.204	-0.097	0.097	1.000												
Avg outdoor T (°C)	0.405	0.675	0.236	-0.672	-0.656	-0.119	NA	-0.164	-0.591	0.599	0.606	-0.309	0.923	0.191	1.000											
Avg outdoor RH (%)	0.490	0.471	0.123	-0.613	-0.575	-0.264	NA	-0.016	-0.565	0.404	0.432	-0.210	0.463	0.410	0.555	1.000										
ΔT (indoor-outdoor) (°C)	-0.386	-0.593	-0.056	0.699	0.676	0.092	NA	0.175	0.604	-0.484	-0.497	0.327	-0.725	-0.261	-0.906	-0.658	1.000									
ACH (h^{-1})	0.225	0.303	0.006	-0.186	-0.127	0.343	NA	-0.200	-0.164	0.277	0.274	-0.151	0.346	0.112	0.331	0.060	-0.212	1.000								
Window opening (#)	-0.189	-0.337	-0.099	-0.036	-0.103	-0.037	NA	0.018	0.092	-0.251	-0.265	0.043	-0.043	0.033	-0.120	-0.408	0.198	0.220	1.000							
T I/O ratio	-0.382	-0.573	-0.058	0.688	0.678	0.122	NA	0.169	0.636	-0.475	-0.490	0.331	-0.736	-0.222	-0.903	-0.644	0.993	-0.168	0.172	1.000						
RH I/O ratio	-0.078	-0.282	-0.092	0.202	0.233	-0.078	NA	-0.001	0.252	-0.182	-0.194	0.061	-0.266	0.688	-0.243	-0.339	0.247	0.053	0.367	0.277	1.000					
Building volume V (m^3)	0.054	0.042	0.224	-0.257	-0.271	-0.198	NA	0.520	0.066	0.124	0.110	0.506	-0.012	-0.144	-0.095	0.137	0.106	-0.197	-0.065	0.102	-0.235	1.000				
Home age (yrs)	0.048	-0.104	-0.214	0.312	0.281	0.080	NA	-0.536	-0.042	-0.113	-0.101	-0.541	0.024	0.051	0.125	-0.073	-0.089	0.078	0.039	-0.103	0.164	-0.844	1.000			
Occupants (#)	-0.132	0.246	0.250	0.122	0.122	0.426	NA	-0.229	0.033	0.116	0.129	-0.238	0.067	0.116	0.137	0.096	-0.105	-0.207	-0.176	-0.082	-0.005	-0.018	-0.023	1.000		
Pets (#)	0.134	-0.100	-0.079	-0.355	-0.296	-0.457	NA	0.413	0.002	-0.045	-0.054	0.296	-0.013	0.272	0.101	0.214	-0.230	-0.315	-0.213	-0.246	0.161	0.095	-0.076	-0.407	1.000	
Flooring type in main living area*	0.364	0.192	0.150	0.290	0.245	-0.186	NA	-0.025	-0.279	0.217	0.230	-0.059	0.141	-0.117	0.033	0.150	0.044	-0.025	-0.311	-0.001	-0.237	-0.310	0.491	-0.266	0.011	1.000

Table S25: Spearman rank correlation coefficients for neutral PFAS measured in the gas phase with other neutral PFAS species, building characteristics, and environmental conditions.

	6:2 FTOH	8:2 FTOH	10:2 FTOH	8:2 FTAC	10:2 FTAC	EtFOSA	MeFOSA	MeFOSE	EtFOSE	∑(neutral PFAS)_gas	∑(FTOHs)_gas	∑(FOSEs)_gas	Avg indoor T (°C)	Avg indoor RH (%)	Avg outdoor T (°C)	Avg outdoor RH (%)	ΔT (indoor-outdoor) (°C)	ACH (h^{-1})	Window opening (#)	T I/O ratio	RH I/O ratio	Building volume V (m^3)	Home age (yrs)	Occupants (#)	Pets (#)	Flooring type in main living area*
6:2 FTOH	1.000																									
8:2 FTOH	0.770	1.000																								
10:2 FTOH	0.595	0.727	1.000																							
8:2 FTAC	-0.083	-0.267	-0.077	1.000																						
10:2 FTAC	0.050	-0.098	0.072	0.882	1.000																					
EtFOSA	0.073	0.230	-0.017	-0.028	0.102	1.000																				
MeFOSA	NA	NA	NA	NA	NA	NA	NA																			
MeFOSE	0.121	0.201	0.350	-0.045	0.119	0.006	NA	1.000																		
EtFOSE	-0.262	-0.195	-0.025	0.234	0.416	0.135	NA	0.572	1.000																	
∑(neutral PFAS)	0.878	0.937	0.804	-0.182	-0.016	0.141	NA	0.255	-0.153	1.000																
∑(FTOHs)	0.893	0.935	0.772	-0.169	-0.016	0.147	NA	0.195	-0.213	0.994	1.000															
∑(FOSEs)	0.042	0.146	0.301	0.034	0.206	0.027	NA	0.955	0.728	0.188	0.122	1.000														
Avg indoor T (°C)	0.637	0.828	0.561	-0.326	-0.256	0.061	NA	0.096	-0.266	0.785	0.777	0.040	1.000													
Avg indoor RH (%)	0.418	0.542	0.374	-0.247	-0.069	0.285	NA	0.018	-0.166	0.467	0.474	0.032	0.467	1.000												
Avg outdoor T (°C)	0.620	0.793	0.436	-0.355	-0.233	0.303	NA	-0.018	-0.273	0.731	0.742	-0.085	0.910	0.548	1.000											
Avg outdoor RH (%)	0.485	0.552	0.245	-0.253	-0.314	0.193	NA	-0.288	-0.593	0.451	0.474	-0.385	0.569	0.435	0.590	1.000										
ΔT (indoor-outdoor) (°C)	-0.610	-0.722	-0.279	0.379	0.261	-0.387	NA	0.023	0.299	-0.652	-0.677	0.109	-0.767	-0.567	-0.937	-0.634	1.000									
ACH (h^{-1})	-0.235	-0.154	-0.328	0.020	-0.069	0.407	NA	-0.278	-0.031	-0.278	-0.269	-0.155	-0.155	-0.136	-0.155	-0.078	0.206	1.000								
Window opening (#)	-0.009	-0.176	0.169	-0.178	-0.194	-0.273	NA	0.050	0.019	-0.061	-0.075	0.062	-0.101	0.158	-0.082	-0.169	0.089	-0.081	1.000							
T I/O ratio	-0.631	-0.735	-0.311	0.358	0.251	-0.331	NA	0.051	0.321	-0.672	-0.697	0.133	-0.789	-0.555	-0.942	-0.662	0.992	0.239	0.089	1.000						
RH I/O ratio	-0.005	-0.135	-0.002	-0.077	0.111	-0.039	NA	0.254	0.440	-0.050	-0.056	0.345	-0.240	0.308	-0.175	-0.588	0.144	-0.062	0.399	0.195	1.000					
Building volume V (m^3)	0.051	0.124	0.215	-0.373	-0.395	-0.096	NA	0.458	-0.047	0.196	0.166	0.290	0.083	-0.091	-0.033	-0.041	0.009	-0.191	0.130	0.045	0.049	1.000				
Home age (yrs)	0.000	-0.175	-0.191	0.379	0.385	0.027	NA	-0.497	0.054	-0.196	-0.169	-0.370	-0.140	-0.129	-0.041	0.026	0.080	0.165	-0.055	0.058	-0.045	-0.860	1.000			
Occupants (#)	-0.184	0.116	0.212	-0.073	-0.062	0.052	NA	-0.070	0.140	0.070	0.049	0.002	0.080	0.123	0.081	0.035	-0.023	-0.216	-0.005	-0.019	0.063	0.054	-0.086	1.000		
Pets (#)	0.000	-0.165	-0.270	0.045	0.084	0.023	NA	0.246	0.240	-0.126	-0.150	0.237	-0.144	-0.106	-0.111	-0.213	0.024	-0.147	-0.398	0.019	0.132	-0.010	-0.042	-0.400	1.000	
Flooring type in main living area*	0.339	0.263	0.211	0.100	0.207	0.004	NA	-0.071	-0.071	0.241	0.243	-0.033	0.122	-0.134	0.023	0.191	0.022	0.203	-0.305	0.002	-0.163	-0.305	0.499	-0.291	0.068	1.000

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