

Semi-volatile organic compounds in the air and dust of 30 French schools: a pilot study

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Dust sampling.

To avoid any disturbance of air sampling, dust was sampled either during the week preceding air sampling or just after the end of air sampling. Two different methods were used for sampling settled dust. The first method consisted of vacuuming dust settled on the floor using a modified vacuum cleaner (LG Electronics, Seoul, South Korea): the nozzle was covered with aluminum foil and dust was collected in a cellulose thimble (Whatman, Maidstone, Kent) placed at the entrance of the tube in order to avoid any contact with the internal parts of the vacuum cleaner, thus limiting foreign contamination of the sample. A 10 to 12 m² area in which children spend most time was measured and vacuumed slowly (about 0.5 m² per minute). The amount of dust present in the cellulose cartridge was then visually checked: if it was insufficient, another area was selected, measured and vacuumed. This procedure was repeated until the cellulose cartridge was at least half full. The cartridge was then wrapped in aluminum foil previously cleaned with DCM, transported back to the laboratory in an ice-box and kept in a freezer prior to extraction. The second method consisted of collecting settled dust using a damp wipe (Aramco, Paulsboro, USA) on a 0.1 m² square floor surface delimited by a cardboard template (atelier du cadre, Carentoir, France). The cardboard template was cleaned using a wipe and phthalate free gloves were worn in order to avoid external contamination of the sample. The floor surface area to be sampled was a smooth surface such as stone, wooden or plastic floor, chosen in an area where the children spend most time, and where possible, was a smooth surface such as a stone, wooden or plastic floor. A wipe was removed from its package and laid flat in a corner of the template. It was then slowly moved from side to side and from top to bottom, as if drawing an "S" shape. The wipe was then folded in two, keeping the collected dust inside the fold and applied with the same slow motion, perpendicular to the previous passage. The wipe was folded once more, keeping the dust inside, and applied over the edges and corners of the template (NF X 46-032, 2008). The wipe was then rolled and inserted into a glass amber vial, previously cleaned with DCM. The same procedure was performed twice more, to collect three wipes per classroom. A sampling blank was made for each school investigated (i.e. one field blank for every 3 classrooms) using another wipe that was taken out of its package, folded, rolled and inserted into a glass amber vial in the same way as for the samples. Wipes were transported back to the laboratory in an ice-box and kept in a freezer prior to analysis.

Reagents and chemicals

Certified standards of aldrin, cis- and trans-chlordane, 4,4'-DDE, 4,4'-DDT, dieldrin, alpha-endosulfan, endrin, heptachlor, metolachlor, alpha-HCH, gamma-HCH (lindane), chlorpyrifos, diazinon, dichlorvos, atrazine, oxadiazon, cyfluthrin, cypermethrin, deltamethrin, permethrin, tetramethrin, tributylphosphate, acenaphthene, anthracene, benzo[a]pyrene, fluoranthene, fluorene, phenanthrene, pyrene, PCB 77, 105, 126, butylbenzylphthalate (BBP), di-n-butylphthalate (DBP), di(2-ethylhexyl)phthalate (DEHP), diethylphthalate (DEP), diisobutylphthalate (DiBP), diisononylphthalate (DiNP), dimethoxyethylphthalate (DMEP), dimethylphthalate (DMP), fenprothrin (surrogate standard), methoprotrotryne (surrogate standard) and the internal standard (ISTD) 2,3,4-trichloronitrobenzene (TCNB) were purchased from Dr. Ehrenstorfer GmbH (Augsburg, Germany). Purity of certified standards was above 97 %, except for permethrin (94 %). Acetone and dichloromethane (DCM) (PLUS-for residual pesticide analysis) were purchased from Carlo Erba Reagents (Val

de Reuil, France). Individual standard stock solutions (1 g/L) were prepared in acetone by accurately weighing 25 mg (\pm 0.1 mg) of certified standards into 25 mL volumetric flasks and stored at -18°C . Nonane solutions (50 mg/L) of BDE 85, 99, 100 and 119 were purchased from Wellington Laboratories (Guelph, ON, Canada). Cyclohexane solutions (10 mg/L) of galaxolide (HHCB) and tonalide (AHTN) were obtained from Dr. Ehrenstorfer GmbH (Augsburg, Germany). A mixture (PCB Mix 21) containing 10 mg/L of 8 PCBs (PCB 28, 31, 52, 101, 118, 138, 153 and 180) in cyclohexane was supplied by Dr. Ehrenstorfer GmbH (Augsburg, Germany). Calibration solutions were prepared by appropriate dilution of individual standard stock solutions and commercial solutions in DCM.

The Standard Reference Material SRM 2585 (Organic Contaminants in House Dust) was purchased from the National Institute of Standards and Technology (NIST, Gaithersburg, MD, USA). Celite[®] 545 was purchased from Merck KGaA (Darmstadt, Germany). Chromabond[®] NH₂ (aminopropyl modified silica) glass columns (3 mL / 500 mg) were purchased from Macherey-Nagel GmbH & Co. KG (Düren, Germany).

Sample extraction

For air samples (gas and particulate phases), semivolatile organic compounds (SVOCs) were extracted from polyurethane foam (PUF) and quartz fiber filter (QFF) together using a pressurized liquid extractor (PLE) ASE (Accelerated Solvent Extractor) 350 (Dionex Corporation, Sunnyvale, USA). The QFF was placed on top of a cellulose filter at the bottom of each stainless steel cell. The PUF was then inserted into the cell and another cellulose filter was placed on top after adding 100 ng of each surrogate standard (fenprothrin and methoprotrene). Extractions were performed once with DCM. Organic extracts were concentrated to 0.5 mL at 30°C under a nitrogen stream, spiked with 1 μg of ISTD and stored at -18°C prior to analysis.

SVOC extractions from vacuumed dust were performed on 200 mg of sieved dust. After adding 100 ng of each surrogate standard, extractions were performed using PLE. Organic extracts were concentrated to 10 mL at 30°C under a nitrogen stream. A volume of 500 μL was transferred into a 1.5 mL amber glass vial and spiked with 1 μg of ISTD. This aliquot was dedicated to quantification of the most concentrated compounds, such as phthalates. The remaining 9.5 mL were concentrated to 1 mL and transferred onto Chromabond[®] NH₂ glass columns prewashed with 6 mL of DCM. Elution was performed with 5 mL of DCM. The extracts were then concentrated to 0.5 mL and spiked with 1 μg of ISTD. All extracts were stored at -18°C prior to analysis.

Sample analysis

All extracts were analyzed using a gas chromatograph (GC) (Trace GC Ultra) coupled to a mass spectrometer (MS) (TSQ Quantum GC) operated in electron impact ionization (EI) mode (70 eV) (Thermo Scientific). The GC system was equipped with a TriPlus Autosampler and a Programmable Temperature Vaporizing (PTV) injector fitted with an empty baffled glass liner. Calibration solutions and sample extracts were injected (1 μL) in splitless mode. Helium was used as column carrier gas at a constant flow rate of 2 mL/min. Chromatographic separation was performed on a Rtx-PCB capillary column (60 m length x 0.25 mm I.D., 0.25 μm film thickness)

supplied by Restek (Lisses, France). The triple quadrupole MS was operated in multiple reaction monitoring (MRM) mode and the two most sensitive and specific transitions were monitored for each compound.

Preparation of laboratory blank and quality control (QC) samples

For air samples, cleaned PUFs were used as laboratory blank samples and QC samples consisted of cleaned PUFs spiked with the calibration solution at a concentration of twice or eight times the LOQ. These were prepared with each batch of nine samples. For vacuumed dust samples, laboratory blank samples consisted of Celite (2800 mg) and QC samples were made of 200 mg of the NIST (National Institute of Standards and Technology) SRM 2585 which contains indicative, reference or certified concentrations of several target compounds (Mercier et al., 2014). Both were prepared with each batch of nine samples. For wiped dust samples, wipes freshly removed from their packaging were used as laboratory blank samples and QC samples were performed by spreading 200 mg of SRM 2585 onto wipes also freshly removed from their packaging. These were prepared with the samples of each six classrooms.

Data validation process

The data validation protocol of the method contained several conditions including (i) the area of the ISTD in samples had to be within $\pm 25\%$ of its area in calibration solutions, (ii) the determination coefficient of the calibration curve had to be greater than 0.995, (iii) the concentration of a substance in the laboratory blank sample had to be lower than 30% of the concentration measured in the associated samples, (iv) the measured concentration in calibration check solutions, injected every 10 samples, had to be within $\pm 25\%$ of its nominal concentration value, (v) the measured concentration of the calibration solution at the LOQ level had to be within $\pm 50\%$ of its nominal concentration value, and (vi) the concentration measured in the Standard Reference Material 2585 had to be within the limits set for the current year. If those conditions were not met, samples would either be re-analyzed or re-extracted if possible. For laboratory blanks, the validation conditions were as described in the main document ("When either a field blank sample or a laboratory blank sample showed a concentration greater than 30 % of the concentration found in the associated samples, the results in these samples were not validated and were removed from the data. If the contamination was less than 30% of the concentration found in associated samples, the concentrations for these samples were reported without blank correction").

SVOC concentrations in air QC samples

Concentrations measured in air QC samples and associated RSD and recovery data are summarized in SI Table 4. For low level (LOQ x 2) and high level (LOQ x 8) QCs, measured concentrations ranged from 77 to 124% and 79 to 119% respectively of the spiked concentrations, indicating good accuracy of results. For the low level QCs, RSD ranged from 11% to 34% for all compounds except phthalates, for which RSD ranged from 13% to 48%, because of occasional background contamination. For the high level QCs, RSD ranged from 8% to 33%. Overall, precision of the results was satisfactory: of the 55 compounds analyzed, RSD were below 25% for 47 compounds in low level QCs, and for 50 compounds in high level QCs.

SVOC concentrations in SRM 2585

Concentrations measured in SRM 2585 are summarized in SI Table 5. Overall they were in a good agreement with the indicative, reference or certified concentrations for the SRM 2585 extracted as vacuumed dust where they ranged from 75% to 125% of the indicative, reference or certified concentrations with the exception of heptachlor (60%), 4,4'-DDE (68%) and PCB 153 (73%). Measured concentrations were less accurate in SRM2585 extracted as wiped dust, where they ranged from 50% to 140% - although they fell between 75% and 125% for 25 of the 31 quantified compounds. The measured concentration of anthracene was about twice the certified value in SRM 2585 extracted as vacuumed dust (217%) or wiped dust (194%), confirming the findings of Mercier et al (2012, 2014). Method precision was satisfactory: RSDs for SRM 2585 extracted as vacuumed dust ranged from 10% to 24% and from 14% to 30% for SRM 2585 extracted as wiped dust.

Table S1. Characteristics of schools and classrooms

	This study (2009-2010)	French Survey (Guillam et al., 2011) (2010)
Schools characteristics	n=30	n=466
<i>Building's year of construction</i>		
Before 1946	22%	27%
Between 1946 and 2000	64%	56%
After 2000	13%	8%
<i>Heating energy</i>		
gas	63%	43%
oil	13%	30%
electricity	10%	20%
<i>Ventilation</i>		
Natural	70%	85%
Mechanical	30%	15%
<i>Outdoor environment</i>		
Urban	47%	44%
Rural	53%	35%
Residential		18%
Classrooms characteristics		
<i>Age of children</i>	n=90	n=985
2 to 5 years old	49%	49%
6 to 11 years old	51%	51%
<i>Number of Children</i>	n=90	n=936
Average	24.4	23.7
<i>Story</i>	n=90	n=924
Ground floor	80%	76%
2nd floor	16%	21%
3rd floor	4%	3%
<i>Floor covering</i>	n=90	n=960
PVC	70%	60%
Stone	34%	32%
Wood	10%	9%
<i>Wall covering</i>	n=90	n=949
Paint	78%	90%
Wall paper	29%	12%

Table S2. SVOCs of interest for the study

Substance	Air (ng/m ³)		Vacuumed dust (< 100 µm fraction) (ng/g)		Wiped dust (ng/m ²)		Air (ng/m ³)		Vacuumed dust (< 100 µm fraction) (ng/g)		Wiped dust (ng/m ²)		
	LOQ	UL	LOQ	UL	LOQ	UL	LOQ	UL	LOQ	UL	LOQ	UL	
<i>Organochlorinated pesticides:</i>						<i>PAHs:</i>							
α-HCH	0.4	20	26	1 320	20	830	Acenaphthene	1.0	50	66	3 290	40	2 080
γ-HCH	1.0	50	66	3 290	40	2 080	Fluorene	1.0	50	66	3 290	40	2 080
Heptachlor	0.4	20	26	1 320	20	830	Phenanthrene	1.0	50	66	3 290	40	2 080
Metolachlor	1.0	50	66	3 290	40	2 080	Anthracene	1.0	50	66	3 290	40	2 080
Aldrin	1.0	50	66	3 290	40	2 080	Fluoranthene	1.0	50	66	3 290	40	2 080
Trans-chlordane	0.4	20	26	1 320	20	830	Pyrene	1.0	50	66	3 290	40	2 080
Cis-chlordane	0.4	20	26	1 320	20	830	Benzo(a)pyrene	1.0	50	66	3 290	40	2 080
Alpha-endosulfan	1.0	50	66	3 290	40	2 080	<i>PCBs:</i>						
4,4'-DDE	0.4	20	26	1 320	20	830	PCB 31	0.4	20	26	1 320	20	830
Dieldrin	1.0	50	66	3 290	40	2 080	PCB 28	0.4	20	26	1 320	20	830
Endrin	1.0	50	66	3 290	40	2 080	PCB 52	0.4	20	26	1 320	20	830
4,4'-DDT	1.0	50	66	3 290	40	2 080	PCB 101	0.4	20	26	1 320	20	830
<i>Organophosphorus pesticides:</i>						PCB 77							
Dichlorvos	1.0	50	66	3 290	40	2 080	PCB 118	0.4	20	26	1 320	20	830
Diazinon	1.0	50	66	3 290	40	2 080	PCB 153	0.4	20	26	1 320	20	830
Chlorpyrifos	1.0	50	66	3 290	40	2 080	PCB 105	0.4	20	26	1 320	20	830
<i>Other pesticides:</i>						PCB 138							
Atrazine	1.0	50	66	3 290	40	2 080	PCB 126	0.4	20	26	1 320	20	830
Oxadiazon	1.0	50	66	3 290	40	2 080	PCB 180	0.4	20	26	1 320	20	830
<i>Pyrethroids:</i>						<i>Phthalates:</i>							
Tetramethrin	1.0	50	66	3 290	40	2 080	DMP	1.0	50	66	3 290	40	2 080
Permethrin	1.0	50	66	3 290	40	2 080	DEP	8.0	800	526	52 600	333	33 300
Cyfluthrin	1.0	50	66	3 290	40	2 080	DiBP	8.0	800	526	52 600	333	33 300
Cypermethrin	1.0	50	66	3 290	40	2 080	DBP	8.0	800	526	52 600	333	33 300
Deltamethrin	1.0	50	66	3 290	40	2 080	DMEP	1.0	50	66	3 290	40	2 080
<i>Phosphoric ester :</i>						BBP							
Tributylphosphate	1.0	50	66	3 290	40	2 080	DEHP	8.0	800	526	52 600	333	33 300
<i>Musks:</i>						DiNP							
Galaxolide	1.0	50	66	3 290	40	2 080	BDE 100	1.0	50	66	3 290	40	2 080
Tonalide	1.0	50	66	3 290	40	2 080	BDE 119	1.0	50	66	3 290	40	2 080
						BDE 99							
						BDE 85							

LOQ: limit of quantitation. UL: upper limit of the calibration range.

α-HCH: α-hexachlorocyclohexane, γ-HCH: γ-hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, DMEP: di(methoxyethyl)-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

Table S3. Air sampling method evaluation

	Spiked mass (ng)	Spiked concentration (ng/m ³) ^a	Measured / spiked concentration (%) for glass cartridges (n=3)	Measured / spiked concentration (%) in second PUF in series (n=1) ^b		Spiked mass (ng)	Spiked concentration (ng/m ³)	Measured / spiked concentration (%) for glass cartridges (n=3)	Measured / spiked concentration (%) in second PUF in series (n=1) ^b
<i>Organochlorinated pesticides:</i>					<i>PAHs (continued):</i>				
α -HCH	200	16	102 ± 6		Phenanthrene	500	40	100 ± 4	
γ -HCH	500	40	98 ± 5		Anthracene	500	40	31 ± 6	0
Aldrin	500	40	0 ± 0	0	Fluoranthene	500	40	106 ± 4	
Alpha-endosulfan	500	40	86 ± 3		Pyrene	500	40	85 ± 4	
4,4'-DDE	200	16	96 ± 2		Benzo(a)pyrene	500	40	1 ± 1	0
Dieldrin	500	40	97 ± 5		<i>PCBs:</i>				
4,4'-DDT	500	40	110 ± 6		PCB 31	200	16	97 ± 8	
<i>Organophosphated pesticides:</i>					PCB 28	200	16	99 ± 1	
Dichlorvos	500	40	13 ± 1	0	PCB 52	200	16	99 ± 2	
Diazinon	500	40	66 ± 2		PCB 101	200	16	96 ± 7	
Chlorpyrifos	500	40	91 ± 5		PCB 118	200	16	98 ± 3	
<i>Other pesticides:</i>					PCB 153	200	16	97 ± 3	
Oxadiazon	500	40	102 ± 5		PCB 105	200	16	99 ± 5	
<i>Pyrethroids:</i>					PCB 138	200	16	99 ± 2	
Tetramethrin	500	40	0 ± 0	0	PCB 180	200	16	99 ± 6	
Permethrin	2500	200	95 ± 3		<i>Phthalates:</i>				
Cyfluthrin	500	40	89 ± 3		DEP	1E+05	8000	97 ± 2	
Cypermethrin	500	40	87 ± 6		DiBP	1E+05	8000	96 ± 1	
Deltamethrin	500	40	81 ± 17		DBP	1E+05	8000	93 ± 2	
<i>Phosphoric ester :</i>					BBP	1E+05	8000	100 ± 4	
Tributylphosphate	2500	200	99 ± 4		DEHP	1E+05	8000	95 ± 1	
<i>Musks:</i>					DiNP	1E+05	8000	85 ± 4	
Galaxolide	10000	800	91 ± 4		<i>PBDEs:</i>				
Tonalide	10000	800	93 ± 2		BDE 100	500	40	85 ± 5	
<i>PAHs:</i>					BDE 99	500	40	95 ± 7	
Acenaphthene	500	40	8 ± 0	4	BDE 85	500	40	86 ± 8	
Fluorene	500	40	81 ± 8						

^abased on 12,5m³ sampled at 2 L/min from Monday 8:30 to Friday 16:30 ; ^bMeasured / spiked concentration (%) in PUF in series = (concentration in PUF in series after spiked PUF - concentration in PUF in series after witness PUF)/spiked concentration .

α -HCH: α -hexachlorocyclohexane, γ -HCH: γ -hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

This evaluation was carried out for the 44 compounds that were more often quantified and later selected for the national campaign.

Table S4. SVOC concentrations in air QC samples (ng/m³)

Substance	SVOC concentrations (ng/m ³) in air QC sample Level 1 (LOQx2) (n=14)			SVOC concentrations (ng/m ³) in air QC sample Level 2 (LOQx8) (n=12)		
	Measured concentration (RSD (%))	Spiked concentration	Measured / spiked concentration (%)	Measured concentration (RSD (%))	Spiked concentration	Measured / spiked concentration (%)
<i>Organochlorinated pesticides:</i>						
α-HCH	0.740 (31)	0.800	92	3.02 (23)	3.20	94
γ-HCH	1.84 (19)	2.00	92	7.59 (21)	8.00	95
Heptachlor	0.745 (20)	0.800	93	3.07 (17)	3.20	96
Metolachlor	2.12 (17)	2.00	106	8.24 (12)	8.00	103
Aldrin	1.67 (20)	2.00	83	6.93 (15)	8.00	87
Trans-chlordane	0.706 (17)	0.800	88	3.16 (16)	3.20	99
Cis-chlordane	0.686 (16)	0.800	86	3.00 (13)	3.20	94
Alpha-endosulfan	1.88 (17)	2.00	94	7.63 (14)	8.00	95
4,4'-DDE	0.697 (18)	0.800	87	2.90 (11)	3.20	91
Dieldrin	1.89 (14)	2.00	95	7.60 (10)	8.00	95
Endrin	2.10 (11)	2.00	105	8.33 (13)	8.00	104
4,4'-DDT	2.48 (25)	2.00	124	8.37 (27)	8.00	105
<i>Organophosphated pesticides:</i>						
Dichlorvos	1.66 (34)	2.00	83	6.38 (33)	8.00	80
Diazinon	1.89 (18)	2.00	95	8.03 (17)	8.00	100
Chlorpyrifos	2.18 (21)	2.00	109	9.18 (24)	8.00	115
<i>Other pesticides:</i>						
Atrazine	1.88 (19)	2.00	94	7.30 (15)	8.00	91
Oxadiazon	1.88 (15)	2.00	94	7.94 (15)	8.00	99
<i>Pyrethroids:</i>						
Tetramethrin	2.10 (14)	2.00	105	8.65 (13)	8.00	108
Permethrin	1.96 (10)	2.00	98	8.31 (10)	8.00	104
Cyfluthrin	2.10 (17)	2.00	105	8.74 (14)	8.00	109
Cypermethrin	2.09 (13)	2.00	105	8.37 (13)	8.00	105
Deltamethrin	2.29 (18)	2.00	114	8.94 (17)	8.00	112
<i>Phosphoric ester :</i>						
Tributylphosphate	1.97 (19)	2.00	99	7.82 (15)	8.00	98
<i>Musks:</i>						
Galaxolide	2.27 (31)	2.00	113	7.70 (20)	8.00	96
Tonalide	1.86 (22)	2.00	93	7.04 (18)	8.00	88
<i>PAHs:</i>						
Acenaphthene	1.54 (30)	2.00	77	6.30 (34)	8.00	79
Fluorene	1.64 (25)	2.00	82	6.42 (19)	8.00	80
Phenanthrene	1.91 (15)	2.00	96	7.87 (17)	8.00	98
Anthracene	1.97 (11)	2.00	99	7.92 (13)	8.00	99
Fluoranthene	1.93 (14)	2.00	96	7.95 (10)	8.00	99
Pyrene	2.00 (12)	2.00	100	7.77 (8)	8.00	97
Benzo(a)pyrene	1.99 (24)	2.00	100	7.94 (14)	8.00	99
<i>PCBs:</i>						
PCB 31	0.730 (16)	0.800	91	3.11 (15)	3.20	97
PCB 28	0.683 (19)	0.800	85	2.83 (15)	3.20	88
PCB 52	0.703 (18)	0.800	88	3.01 (16)	3.20	94
PCB 101	0.736 (17)	0.800	92	3.07 (15)	3.20	96
PCB 77	0.786 (14)	0.800	98	3.25 (11)	3.20	101
PCB 118	0.768 (16)	0.800	96	3.09 (13)	3.20	96
PCB 153	0.743 (18)	0.800	93	3.13 (15)	3.20	98
PCB 105	0.751 (16)	0.800	94	3.19 (13)	3.20	100
PCB 138	0.747 (16)	0.800	93	3.11 (12)	3.20	97
PCB 126	0.789 (13)	0.800	99	3.27 (12)	3.20	102
PCB 180	0.723 (18)	0.800	90	3.14 (13)	3.20	98
<i>Phthalates:</i>						
DMP	2.20 (48)	2.00	110	7.55 (30)	8.00	94
DEP	16.7 (35)	16.0	104	76.4 (31)	64.0	119
DiBP	20.4 (26)	16.0	127	68.6 (16)	64.0	107
DBP	17.8 (18)	16.0	111	65.0 (14)	64.0	102
DMEP	2.02 (13)	2.00	101	7.90 (13)	8.00	99
BBP	2.24 (31)	2.00	112	8.72 (12)	8.00	109
DEHP	19.9 (22)	16.0	125	74.2 (11)	64.0	116
DiNP	18.6 (21)	16.0	116	79.7 (30)	64.0	125
<i>PBDEs:</i>						
BDE 100	1.96 (14)	2.00	98	7.86 (18)	8.00	98
BDE 119	1.95 (19)	2.00	98	7.95 (17)	8.00	99
BDE 99	1.94 (18)	2.00	97	8.01 (20)	8.00	100
BDE 85	2.04 (22)	2.00	102	8.26 (17)	8.00	103

LOQ: limit of quantitation. RSD: Relative Standard Deviation

α-HCH: α-hexachlorocyclohexane, γ-HCH: γ-hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-p-phthalate, DEP: diethyl-p-phthalate, DiBP: diisobutyl-p-phthalate, DBP: dibutyl-p-phthalate, DMEP: di(methoxyethyl)-p-phthalate, BBP: butyl benzyl p-phthalate, DEHP: bis(2-ethylhexyl)-p-phthalate, DiNP: diisononyl-p-phthalate, PBDEs: polybromodiphenylethers.

Table S5. SVOC concentrations in SRM 2585 (ng/g)

Substance	Indicative, reference or certified concentration	SVOC concentrations (ng/g) in SRM2585 extracted as vacuumed dust QC control (n=12) ^d		SVOC concentrations (ng/g) in SRM2585 extracted as wiped dust QC control (n=10)	
		Measured concentration (RSD (%))	Measured/ Indicative, reference or certified concentration (%)	Measured concentration (RSD (%))	Measured/ Indicative, reference or certified concentration (%)
<i>Organochlorinated pesticides:</i>					
γ-HCH	4.1 ^b	< 65.8	-	< 62.5	-
Heptachlor	166 ^b	99.9 (12)	60	83.0 (18)	50
Trans-chlordane	277 ^b	341 (17)	123	294 (18)	106
Cis-chlordane	174 ^b	166 (15)	95	150 (22)	86
4,4'-DDE	261 ^a	177 (14)	68	165 (21)	63
Dieldrin	88.0 ^b	89.5 (21)	102	109 (23)	124
4,4'-DDT	111 ^a	125 (18)	113	131 (29)	118
<i>Organophosphated pesticides:</i>					
Diazinon	396 ^c	380 (14)	96	343 (17)	87
Chlorpyrifos	279 ^c	244 (21)	87	282 (19)	101
<i>Pyrethroids:</i>					
Tetramethrin	356 ^c	350 (22)	98	361 (24)	101
Permethrin	4970 ^c	4322 (22)	87	3910 (17)	79
Cyfluthrin	3730 ^c	3024 (24)	81	3280 (16)	88
Cypermethrin	4050 ^c	3439 (19)	85	3680 (19)	91
<i>Phosphoric ester :</i>					
Tributylphosphate	306 ^c	255 (20)	83	247 (16)	81
<i>Musks:</i>					
Galaxolide	1540 ^c	1460 (14)	95	1350 (15)	88
Tonalide	1840 ^c	1730 (14)	94	1680 (17)	91
<i>PAHs:</i>					
Phenanthrene	1920 ^a	1710 (12)	89	1480 (18)	77
Anthracene	96.0 ^a	208 (21)	217	186 (26)	194
Fluoranthene	4380 ^a	2630 (16)	83	3370 (19)	77
Pyrene	3290 ^a	2740 (17)	83	2620 (20)	80
Benzo(a)pyrene	1140 ^a	897 (23)	79	1230 (30)	108
<i>PCBs:</i>					
PCB 31	14.0 ^a	<26.3	-	< 25	-
PCB 28	13.4 ^a	<26.3	-	< 25	-
PCB 52	21.8 ^a	20.4 (18)	94	20.6 (15)	94
PCB 101	29.8 ^a	34.5 (15)	116	31.9 (17)	107
PCB 118	26.3 ^a	29.6 (12)	112	< 25	-
PCB 153	40.2 ^a	29.3 (15)	73	< 25	-
PCB 105	13.2 ^a	<26.3	-	< 25	-
PCB 138	27.6 ^a	33.1 (14)	120	30.7 (14)	111
PCB 180	18.4 ^a	20.3 (21)	110	19.8 (18)	108
<i>Phthalates:</i>					
DMP	2550 ^c	2104 (10)	83	2350 (20)	92
DEP	8240 ^c	7700 (11)	93	7650 (20)	93
DiBP	6670 ^c	6370 (18)	96	5230 (21)	78
DBP	33300 ^c	28900 (16)	87	23900 (19)	72
BBP ^d	98700 ^c	82700 (22)	84	> 3130	-
DEHP ^d	552000 ^c	436000 (16)	79	> 50000	-
DiNP ^d	182000 ^c	157000 (13)	86	> 50000	-
<i>PBDEs:</i>					
BDE 100	145 ^a	134 (20)	92	118 (22)	81
BDE 99	892 ^a	753 (14)	84	647 (21)	73
BDE 85	43.8 ^a	47.4 (20)	108	61.1 (18)	140

LOQ: limit of quantitation. RSD: Relative Standard Deviation

γ-HCH: gamma-hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

^a Certified concentration.

^b Reference concentration.

^c Indicative concentration taken from Mercier et al. (J. Chromatogr. A 1336 (2014) 101-111)

^d Concentrations from less concentrated extracts used for SRM2585 extracts extracted as vacuumed dust QC sample (n=3)

Table S6. SVOC concentrations in French classrooms (Brittany, France, 2010)

Substance	Air (ng/m ³)							Vacuumed dust (< 100 µm fraction) (ng/g)							Wiped dust (ng/m ²)						
	LOQ	UL	N	5th%	50th%	95th%	F	LOQ	UL	N	5th%	50th%	95th%	F	LOQ	UL	N	5th%	50th%	95th%	F
<i>Organochlorinated pesticides:</i>																					
α-HCH	0.4	20	59	<0.4	<0.4	3.4	24%	26	1 320	89	<26.3	<26.3	<26.3	2%	20	830	81	<20	<20	<20	1%
γ-HCH	1.0	50	62	<1.0	2.0	7.2	79%	66	3 290	89	<65.8	<65.8	247	18%	40	2 080	81	<40	<40	<40	4%
Heptachlor	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	0%	20	830	81	<20	<20	<20	0%
Metolachlor	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Aldrin	1.0	50	62	*	*	*	2%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Trans-chlordane	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	1%	20	830	81	<20	<20	<20	0%
Cis-chlordane	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	0%	20	830	81	<20	<20	<20	0%
Alpha-endosulfan	1.0	50	62	<1.0	<1.0	<1.0	5%	66	3 290	89	<65.8	<65.8	<65.8	1%	40	2 080	81	<40	<40	<40	1%
4,4'-DDE	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	2%	20	830	81	<20	<20	<20	0%
Dieldrin	1.0	50	62	<1.0	<1.0	1.0	6%	66	3 290	89	<65.8	<65.8	<65.8	2%	40	2 080	81	<40	<40	<40	1%
Endrin	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	4%	40	2 080	81	<40	<40	<40	0%
4,4'-DDT	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	177	15%	40	2 080	81	<40	<40	<40	2%
<i>Organophosphated pesticides:</i>																					
Dichlorvos	1.0	50	62	*	*	*	2%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Diazinon	1.0	50	62	<1.0	<1.0	1.2	6%	66	3 290	89	<65.8	<65.8	<65.8	2%	40	2 080	81	<40	<40	<40	0%
Chlorpyrifos	1.0	50	62	<1.0	<1.0	<1.0	2%	66	3 290	89	<65.8	<65.8	<65.8	3%	40	2 080	81	<40	<40	<40	2%
<i>Other pesticides:</i>																					
Atrazine	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Oxadiazon	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	110	9%	40	2 080	81	<40	<40	<40	1%
<i>Pyrethroids:</i>																					
Tetramethrin	1.0	50	62	*	*	*	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Permethrin	1.0	50	62	<1.0	<1.0	<1.0	2%	66	3 290	89	<65.8	279	1 961	61%	40	2 080	81	<40	<40	578	27%
Cyfluthrin	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Cypermethrin	1.0	50	62	<1.0	<1.0	<1.0	2%	66	3 290	89	<65.8	<65.8	<65.8	4%	40	2 080	81	<40	<40	<40	1%
Deltamethrin	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
<i>Phosphoric ester :</i>																					
Tributylphosphate	1.0	50	62	2.0	4.7	12.4	100%	66	3 290	89	<65.8	103	401	74%	40	2 080	79	<40	<40	190	20%
<i>Musks:</i>																					
Galaxolide	1.0	50	62	46	>50	>50	100%	66	3 290	89	304	965	2 191	98%	40	2 080	65	148	335	1 213	97%
Tonalide	1.0	50	62	10	20	>50	100%	66	3 290	89	<65.8	337	915	88%	40	2 080	81	<40	170	642	63%
<i>PAHs:</i>																					
Acenaphtene	1.0	50	62	*	*	*	53%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
Fluorene	1.0	50	62	2.5	5.5	13	100%	66	3 290	89	<65.8	<65.8	268	40%	40	2 080	81	<40	<40	175	9%
Phenanthrene	1.0	50	62	4.8	8.7	18	100%	66	3 290	89	<65.8	363	907	92%	40	2 080	75	<40	<40	539	45%
Anthracene	1.0	50	62	*	*	*	2%	66	3 290	89	<65.8	<65.8	127	40%	40	2 080	81	<40	<40	<40	1%
Fluoranthene	1.0	50	62	<1.0	<1.0	1.6	29%	66	3 290	89	<65.8	184	751	85%	40	2 080	81	<40	<40	441	32%
Pyrene	1.0	50	62	<1.0	<1.0	1.2	18%	66	3 290	89	<65.8	285	760	90%	40	2 080	80	<40	<40	525	40%
Benzo(a)pyrene	1.0	50	62	*	*	*	0%	66	3 290	89	<65.8	<65.8	172	27%	40	2 080	81	<40	<40	125	6%

Substance	Air (ng/m ³)							Vacuumed dust (< 100 µm fraction) (ng/g)							Wiped dust (ng/m ²)						
	LOQ	UL	N	5th%	50th%	95th%	F	LOQ	UL	N	5th%	50th%	95th%	F	LOQ	UL	N	5th%	50th%	95th%	F
<i>PCBs:</i>																					
PCB 31	0.4	20	62	<0.4	<0.4	0.6	15%	26	1 320	89	<26.3	<26.3	<26.3	2%	20	830	81	<20	<20	<20	0%
PCB 28	0.4	20	62	<0.4	<0.4	0.9	19%	26	1 320	89	<26.3	<26.3	<26.3	6%	20	830	81	<20	<20	<20	0%
PCB 52	0.4	20	62	<0.4	<0.4	0.5	16%	26	1 320	89	<26.3	<26.3	48	7%	20	830	81	<20	<20	<20	2%
PCB 101	0.4	20	62	<0.4	<0.4	<0.4	2%	26	1 320	89	<26.3	<26.3	107	13%	20	830	81	<20	<20	<20	1%
PCB 77	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	2%	20	830	81	<20	<20	<20	0%
PCB 118	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	42	8%	20	830	81	<20	<20	<20	1%
PCB 153	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	73	9%	20	830	81	<20	<20	<20	1%
PCB 105	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	3%	20	830	81	<20	<20	<20	1%
PCB 138	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	79	10%	20	830	81	<20	<20	<20	1%
PCB 126	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	0%	20	830	81	<20	<20	<20	0%
PCB 180	0.4	20	62	<0.4	<0.4	<0.4	0%	26	1 320	89	<26.3	<26.3	<26.3	4%	20	830	81	<20	<20	<20	0%
<i>Phthalates:</i>																					
DMP	1.0	50	53	6.7	13	>50	100%	66	3 290	54	<65.8	252	1 680	87%	40	2 080	79	<40	<40	555	39%
DEP	8.0	800	53	85	221	515	100%	526	52 600	76	739	2 890	6 560	93%	333	33 300	65	<333	1 310	5 200	66%
DiBP	8.0	800	62	352	>800	>800	100%	526	52 600	89	41 000	> 52 600	> 52 600	100%	333	33 300	71	11 000	>33 300	>33 300	100%
DBP	8.0	800	62	66	228	744	100%	526	52 600	89	11 000	38 200	> 52 600	100%	333	33 300	64	4 220	15 200	>33 300	100%
DMEP	1.0	50	62	<1.0	<1.0	<1.0	2%	66	3 290	89	<65.8	<65.8	<65.8	4%	40	2 080	81	<40	<40	142	9%
BBP ^{ab}	1.0	50	56	3.7	19	>50	100%	66	3 290	22	11 400	105 000	468 000	100%	40	2 080	22	6 750	73 600	1 940 000	100%
DEHP ^{ab}	8.0	800	58	49	108	417	100%	526	52 600	28	275 000	1 430 000	5 830 000	100%	333	33 300	28	86 900	1 210 000	4 520 000	100%
DiNP ^a	8.0	800	30	8.2	35	214	93%	526	52 600	32	258 000	1 030 000	4 100 000	100%	333	33 300	77	33 000	>33 300	>33 300	100%
<i>PBDEs:</i>																					
BDE 100	1.0	50	62	<1.0	<1.0	1.9	8%	66	3 290	89	<65.8	<65.8	140	8%	40	2 080	81	<40	<40	<40	1%
BDE 119	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%
BDE 99	1.0	50	62	<1.0	<1.0	4.9	13%	66	3 290	89	<65.8	<65.8	340	12%	40	2 080	81	<40	<40	<40	2%
BDE 85	1.0	50	62	<1.0	<1.0	<1.0	0%	66	3 290	89	<65.8	<65.8	<65.8	0%	40	2 080	81	<40	<40	<40	0%

LOQ: limit of quantitation. UL: upper limit of the calibration range. N: number of classrooms. F: frequency of classrooms with concentrations > LOQ.

α -HCH: α -hexachlorocyclohexane, γ -HCH: γ -hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, DMEP: di(methoxyethyl)-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

^aConcentrations from less concentrated extracts for vacuumed dust

^bConcentrations from less concentrated extracts for wiped dust

*Unvalidated air sampling method, substance subject to degradation or low breakthrough volume.

In grey : substance never quantified

Table S7. SVOC concentrations in air (ng/m³) in classrooms (Brittany, France, 2010)

Substance ^a	LOQ	UL	N	N _{<LOQ}	N _{LOQ<<UL}	N _{>UL}	min	5th%	25th%	50th%	75th%	95th%	max	F
<i>Organochlorinated pesticides:</i>														
a-HCH	0.4	20	59	45	14	0	<0.4	<0.4	<0.4	<0.4	<0.4	3.4	12	24%
g-HCH	1.0	50	62	13	49	0	<1	<1	1.1	2.0	2.6	7.2	12	79%
Chlorpyrifos-ethyl	1.0	50	62	61	1	0	<1	<1	<1	<1	<1	<1	4.1	2%
Aldrin ^b	1.0	50	62	61	1	0	*	*	*	*	*	*	*	2%
Alpha-endosulfan	1.0	50	62	59	3	0	<1	<1	<1	<1	<1	<1	2.0	5%
Dieldrin	1.0	50	62	58	4	0	<1	<1	<1	<1	<1	1.0	2.4	6%
<i>Organophosphated pesticides:</i>														
Dichlorvos ^b	1.0	50	62	61	1	0	*	*	*	*	*	*	*	2%
Diazinon	1.0	50	62	58	4	0	<1	<1	<1	<1	<1	1.2	3.1	6%
<i>Pyrethroids:</i>														
Permethrin	1.0	50	62	61	1	0	<1	<1	<1	<1	<1	<1	2.1	2%
Cypermethrin	1.0	50	62	61	1	0	<1	<1	<1	<1	<1	<1	2.9	2%
<i>Phosphoric ester :</i>														
Tributylphosphate	1.0	50	62	0	62	0	1.3	2.0	3.5	4.7	6.7	12	28	100%
<i>Musks:</i>														
Galaxolide	1.0	50	62	0	5	57	14	46.2	>50	>50	>50	>50	>50	100%
Tonalide	1.0	50	62	0	51	11	3.5	10	16	20	36	>50	>50	100%
<i>PAHs:</i>														
Acenaphthene ^b	1.0	50	62	29	33	0	*	*	*	*	*	*	*	53%
Fluorene	1.0	50	62	0	62	0	1.1	2.5	4.1	5.5	7.3	13	18	100%
Phenanthrene	1.0	50	62	0	61	1	1.6	4.8	6.4	8.7	12	18	>50	100%
Anthracene ^b	1.0	50	62	61	1	0	*	*	*	*	*	*	*	2%
Fluoranthene	1.0	50	62	44	18	0	<1	<1	<1	<1	1.1	1.6	8.3	29%
Pyrene	1.0	50	62	51	11	0	<1	<1	<1	<1	<1	1.2	3.6	18%
<i>PCBs:</i>														
PCB31	0.4	20	62	53	9	0	<0.4	<0.4	<0.4	<0.4	<0.4	0.6	2.6	15%
PCB28	0.4	20	62	50	12	0	<0.4	<0.4	<0.4	<0.4	<0.4	0.9	4.2	19%
PCB52	0.4	20	62	52	10	0	<0.4	<0.4	<0.4	<0.4	<0.4	0.5	0.5	16%
PCB101	0.4	20	62	61	1	0	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.6	2%
<i>Phthalates:</i>														
DMP	1.0	50	53	0	49	4	4.1	6.7	10.0	12.6	27.9	>50	>50	100%
DEP	8.0	800	53	0	53	0	40	85	158	221	282	515	684	100%
DiBP	8.0	800	62	0	22	40	207	352	652	>800	>800	>800	>800	100%
DBP	8.0	800	62	0	59	3	37	66	146	228	352	744	>800	100%
DMEP	1.0	50	62	61	1	0	<1	<1	<1	<1	<1	<1	1.1	2%
BBP	1.0	50	56	0	37	19	1.5	3.7	8.0	19	>50	>50	>50	100%
DEHP	8.0	800	58	0	57	1	27	49	72	108	165	417	>800	100%
DiNP	8.0	800	30	2	28	0	<8	8.2	25	35	62	214	416	93%
<i>PBDEs:</i>														
BDE 100	1.0	50	62	57	5	0	<1	<1	<1	<1	<1	1.9	3.1	8%
BDE 99	1.0	50	62	54	8	0	<1	<1	<1	<1	<1	4.9	8.5	13%

LOQ: limit of quantitation. UL: upper limit of the calibration range. N: number of classrooms. N_{<LOQ}: number of samples whose concentration is less than LOQ. N_{LOQ<<UL}: number of samples whose concentration is between LOQ and UL. N_{>UL}: number of samples whose concentration is above UL. F: frequency of classrooms with concentrations > LOQ.

α-HCH: α-hexachlorocyclohexane, γ-HCH: γ-hexachlorocyclohexane (Lindane), PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, DMEP: di(methoxyethyl)-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

^bOnly substances quantified at least once reported.

*Unvalidated sampling method, substance subject to degradation or low breakthrough volume

Table S8. SVOC concentrations in vacuumed dust (< 100 µm fraction) (ng/g) in classrooms (Brittany, France, 2010)

Substance ^a	LOQ	UL	N	N _{c<LOQ}	N _{LOQ<c<UL}	N _{c>UL}	min	5th%	25th%	50th%	75th%	95th%	max	F
<i>Organochlorinated pesticides:</i>														
α-HCH	26.3	1 320	89	87	2	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	33.8	2%
γ-HCH	65.8	3 290	89	73	16	0	<65.8	<65.8	<65.8	<65.8	<65.8	247	482	18%
Trans-chlordane	26.3	1 320	89	88	1	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	84.3	1%
Alpha-endosulfan	65.8	3 290	89	88	1	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	144	1%
4,4'-DDE	26.3	1 320	89	87	2	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	116	2%
Dieldrin	65.8	3 290	89	87	2	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	331	2%
Endrin	65.8	3 290	89	85	4	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	606	4%
4,4'-DDT	65.8	3 290	89	76	13	0	<65.8	<65.8	<65.8	<65.8	<65.8	177	583	15%
<i>Organophosphated pesticides:</i>														
Diazinon	65.8	3 290	89	87	2	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	160	2%
Chlorpyrifos	65.8	3 290	89	86	3	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	1 250	3%
<i>Other pesticides:</i>														
Oxadiazon	65.8	3 290	89	81	8	0	<65.8	<65.8	<65.8	<65.8	<65.8	110	373	9%
<i>Pyrethroids:</i>														
Permethrin	65.8	3 290	89	35	52	2	<65.8	<65.8	<65.8	279	730	1 960	4 500	61%
Cypermethrin	65.8	3 290	89	85	4	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	2 470	4%
<i>Phosphoric ester :</i>														
Tributylphosphate	65.8	3 290	89	23	64	2	<65.8	<65.8	<65.8	103	166	401	> 3290	74%
<i>Musks:</i>														
Galaxolide	65.8	3 290	89	2	87	0	<65.8	304	564	965	1 358	2 190	3 480	98%
Tonalide	65.8	3 290	89	11	78	0	<65.8	<65.8	187	337	506	915	12 700	88%
<i>PAHs:</i>														
Fluorene	65.8	3 290	89	53	36	0	<65.8	<65.8	<65.8	<65.8	111	268	465	40%
Phenanthrene	65.8	3 290	89	7	81	1	<65.8	<65.8	240	363	521	907	> 3290	92%
Anthracene	65.8	3 290	89	53	36	0	<65.8	<65.8	<65.8	<65.8	86	127	702	40%
Fluoranthene	65.8	3 290	89	13	75	1	<65.8	<65.8	122	184	323	751	> 3290	85%
Pyrene	65.8	3 290	89	9	79	1	<65.8	<65.8	194	285	449	760	> 3290	90%
Benzo(a)pyrene	65.8	3 290	89	65	24	0	<65.8	<65.8	<65.8	<65.8	70	172	860	27%
<i>PCBs:</i>														
PCB31	26.3	1 320	89	87	1	1	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	> 1320	2%
PCB28	26.3	1 320	89	84	4	1	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	> 1320	6%
PCB52	26.3	1 320	89	83	5	1	<26.3	<26.3	<26.3	<26.3	<26.3	48.1	> 1320	7%
PCB101	26.3	1 320	89	77	12	0	<26.3	<26.3	<26.3	<26.3	<26.3	107	608	13%
PCB77	26.3	1 320	89	87	2	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	209	2%
PCB118	26.3	1 320	89	82	7	0	<26.3	<26.3	<26.3	<26.3	<26.3	42.2	391	8%
PCB153	26.3	1 320	89	81	8	0	<26.3	<26.3	<26.3	<26.3	<26.3	73.3	541	9%
PCB105	26.3	1 320	89	86	3	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	292	3%
PCB138	26.3	1 320	89	80	9	0	<26.3	<26.3	<26.3	<26.3	<26.3	78.5	556	10%
PCB180	26.3	1 320	89	85	4	0	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	261	4%
<i>Phthalates:</i>														
DMP	65.8	3 290	54	7	47	0	<65.8	<65.8	122	252	531	1 680	2 780	87%
DEP	526	52 600	76	5	71	0	263	739	2 330	2 890	3 840	6 560	10 400	93%
DiBP	526	52 600	89	0	26	63	23 050	41 020	> 52600	> 52600	> 52600	> 52600	> 52600	100%
DBP	526	52 600	89	0	64	25	8 010	11 000	23 200	38 200	> 52600	> 52600	> 52600	100%
DMEP	65.8	3 290	89	85	4	0	<65.8	<65.8	<65.8	<65.8	<65.8	<65.8	5 890	4%
BBP ^b	65.8	3 290	22				8 520	11 400	53 000	105 000	216 000	468 000	1 930 000	100%
DEHP ^b	526	52 600	28				226 000	275 000	709 000	1 430 000	2 240 000	5 830 000	9 280 000	100%
DiNP ^b	526	52 600	32				166 000	258 000	617 000	1 030 000	2 150 000	4 100 000	9 570 000	100%
<i>PBDEs:</i>														
BDE100	65.8	3 290	89	82	7	0	<65.8	<65.8	<65.8	<65.8	<65.8	140	241	8%
BDE99	65.8	3 290	89	78	11	0	<65.8	<65.8	<65.8	<65.8	<65.8	340	575	12%

LOQ: limit of quantitation. UL: upper limit of the calibration range. N: number of classrooms. N_{c<LOQ}: number of samples whose concentration is less than LOQ. N_{LOQ<c<UL}: number of samples whose concentration is between LOQ and UL. N_{c>UL}: number of samples whose concentration is above UL. F: frequency of classrooms with concentrations > LOQ.

α-HCH: α-hexachlorocyclohexane, γ-HCH: γ-hexachlorocyclohexane (Lindane), 4,4'-DDE: dichlorodiphenyldichloroethylene, 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl-phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, DMEP: di(methoxyethyl)-phthalate, BBP: butyl-benzyl-phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

^aOnly substances quantified at least once reported.

^bConcentrations from less concentrated extracts

Table S9. SVOC concentrations in wiped dust (ng/m²) in classrooms (Brittany, France, 2010)

Substance ^a	LOQ	UL	N	N _{<LOQ}	N _{LOQ<<UL}	N _{>UL}	min	5th%	25th%	50th%	75th%	95th%	max	F
<i>Organochlorinated pesticides:</i>														
α-HCH	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	78	1%
γ-HCH	40	2 080	81	78	3	0	<40	<40	<40	<40	<40	<40	329	4%
Alpha-endosulfan	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	337	1%
Dieldrin	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	146	1%
4,4'-DDT	40	2 080	81	79	2	0	<40	<40	<40	<40	<40	<40	229	2%
<i>Organophosphated pesticides:</i>														
Chlorpyrifos	40	2 080	81	79	2	0	<40	<40	<40	<40	<40	<40	328	2%
<i>Other pesticides:</i>														
Oxadiazon	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	600	1%
<i>Pyrethroids:</i>														
Permethrin	40	2 080	81	59	21	1	<40	<40	<40	<40	146	578	>2080	27%
Cypermethrin	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	1 442	1%
<i>Phosphoric ester :</i>														
Tributylphosphate	40	2 080	79	63	14	2	<40	<40	<40	<40	<40	190	>2080	20%
<i>Musks:</i>														
Galaxolide	40	2 080	65	2	63	0	<40	148	258	335	703	1 213	1 624	97%
Tonalide	40	2 080	81	30	51	0	<40	<40	<40	170	232	642	2 044	63%
<i>PAHs:</i>														
Fluorene	40	2 080	81	74	7	0	<40	<40	<40	<40	<40	175	376	9%
Phenanthrene	40	2 080	75	41	33	1	<40	<40	<40	<40	225	539	>2080	45%
Anthracene	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	296	1%
Fluoranthene	40	2 080	81	55	25	1	<40	<40	<40	<40	161	441	>2080	32%
Pyrene	40	2 080	80	48	32	0	<40	<40	<40	<40	182	525	1 924	40%
Benzo(a)pyrene	40	2 080	81	76	5	0	<40	<40	<40	<40	<40	125	308	6%
<i>PCBs:</i>														
PCB52	20	830	81	79	2	0	<20	<20	<20	<20	<20	<20	200	2%
PCB101	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	366	1%
PCB118	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	290	1%
PCB153	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	128	1%
PCB105	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	96	1%
PCB138	20	830	81	80	1	0	<20	<20	<20	<20	<20	<20	150	1%
<i>Phthalates:</i>														
DMP	40	2 080	79	48	31	0	<40	<40	<40	<40	161	555	1 058	39%
DEP	333	33 330	65	22	43	0	<333	<333	<333	1 314	1 951	5 201	17 520	66%
DiBP	333	33 333	71	0	32	39	6 785	10 954	22 405	>33330	>33330	>33330	>33330	100%
DBP	333	33 330	64	0	46	18	2 636	4 219	8 380	15 200	>33 330	>33 330	>33 330	100%
DMEP	40	2 080	81	74	7	0	<40	<40	<40	<40	<40	142	310	9%
BBP ^b	40	2 080	22				5 238	6 752	13 760	73 630	404 300	1 937 000	4 378 000	100%
DEHP ^b	333	33 333	28				48 180	86 870	380 700	1 212 000	2 345 000	4 522 000	6 395 000	100%
DiNP	333	33 333	77	0	4	73	17 056	32 959	>33330	>33330	>33330	>33330	>50000	100%
<i>PBDEs:</i>														
BDE100	40	2 080	81	80	1	0	<40	<40	<40	<40	<40	<40	193	1%
BDE99	40	2 080	81	79	2	0	<40	<40	<40	<40	<40	<40	406	2%

LOQ: limit of quantitation. UL: upper limit of the calibration range. N: number of classrooms. N_{<LOQ}: number of samples whose concentration is less than LOQ. N_{LOQ<<UL}: number of samples whose concentration is between LOQ and UL. N_{>UL}: number of samples whose concentration is above UL. F: frequency of classrooms with concentrations > LOQ.

α-HCH: α-hexachlorocyclohexane, γ-HCH: γ-hexachlorocyclohexane (Lindane), 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, DMEP: di(methoxyethyl)-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

^aOnly substances quantified at least once reported.

^bConcentrations from less concentrated extracts

Table S10. SVOC concentrations from less concentrated extracts in air (ng/m³) in classrooms (Brittany, France)

Substance	N	min	5th%	25th%	50th%	75th%	95th%	max
<i>Musks:</i>								
Galaxolide	7	54	59	75	108	124	145	150
<i>Phthalates:</i>								
DiBP	5	593	605	653	730	2030	2220	2260

N: number of classrooms.

DiBP: diisobutyl-phthalate

Table S11. SVOC concentrations from less concentrated extracts in vacuumed dust (< 100 µm fraction) (ng/g) in classrooms (Brittany, France)

Substance	N	min	5th%	25th%	50th%	75th%	95th%	max
<i>Phthalates:</i>								
DiBP	30	58 600	88 800	132 000	273 000	890 000	1 880 000	2 300 000
BBP	22	8 520	11 400	53 000	105 000	216 000	468 000	1 930 000
DEHP	28	226 000	275 000	709 000	1 430 000	2 240 000	5 830 000	9 280 000
DiNP	32	166 000	258 000	616 000	1 030 000	2 150 000	4 100 000	9 570 000

N: number of classrooms.

DiBP: diisobutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate.

Table S12. SVOC concentrations from less concentrated extracts in wiped dust (ng/m²) in classrooms (Brittany, France)

Substance	N	min.	perc. 5	perc. 25	median	perc. 75	perc. 95	max.
<i>Phthalates:</i>								
DiBP	16	41310	49060	87830	173900	339900	977600	1797000
BBP	27	5238	6752	13760	73630	404300	1937000	4378000
DEHP	24	48180	86870	380700	1212000	2345000	4522000	6395000
DiNP	21	112700	241900	614900	894200	1479000	2499000	6550000

N: number of classrooms.

DiBP: diisobutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate

Table S13. SVOCs in air of nursery and primary schools in ng/m³

Organochlorinated pesticides

Reference	Country, year	Type of school	Sampling method	mean / median	n	γ -HCH	Chlorpyrifos	Aldrin
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4	5.74	13.7	2.08
Kawahara, 2005	Japan, 2003	3 Nursery school / 1 kindergaten	Chromosorb 102 / QFF	median	2		0	
Morgan 2014	USA (North Carolina), 2002	Daycare center	XAD-2/QFF	median	13	< 0.09		0.82
Cequier 2014	Norway, 2012	Primary school	PUF/QFF	median	6			
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	2.0	<1	<1

Organophosphated pesticides

Reference	Country, year	Type of school	Sampling method	mean / median	n	Dichlorvos	Diazinon
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4		4.3
Kawahara, 2005	Japan, 2003	3 Nursery school / 1 kindergaten	Chromosorb 102 / QFF	median	2	13	0
Morgan 2014	USA (North Carolina), 2002	Daycare center	XAD-2/QFF	median	13		2.27
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	<1	<1

Phosphoric ester

Reference	Country, year	Type of school	Sampling method	mean / median	n	Tributylphosphate
Marklund 2005	Sweden, 2005	Daycare center	Isolute NH2 SPE columns	mean	-	3.7
Fromme 2014	Germany, 2012	Daycare center	PUF	median		2.2
Cequier 2014	Norway, 2012	Primary school	PUF/QFF	median	6	3
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	4.7

Musks

Reference	Country, year	Type of school	Sampling method	mean / median	n	Galaxolide	Tonalide
Sofuoglu 2010	Turkey, 2009	Primary school	PUF / GFF	mean	10 ^a	269.8	13.8
Fromme 2004	Germany, 2000/2001	Kindergartens	PUF	median	74	101	44
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	>50	20.5

PAHs

Reference	Country, year	Type of school	Sampling method	mean / median	n	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4	26	6.09	17.4	0.68	0.71	0.364
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	1.1	5.5	8.7	<1	<1	<1

PCBs

Reference	Country, year	Type of school	Sampling method	mean / median	n	PCB28	PCB52	PCB101	<i>PBDEs</i>	
									BDE100	BDE99
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4	12.9	5.29	0.647	0.135	0.279
Lim 2014	Korea 2010/2011	Elementary school	PUF/GFF	mean	54				0.135	0.279
Bradman 2014	USA (California), 2010/2011	Child care or preschool	PUF	median	40				0.12	
Cequier 2014	Norway, 2012	Primary school	PUF/QFF	median	6				0.008	0.023
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	<0,4	<0,4	<0,4	<1	<1

Phthalates

Reference	Country, year	Type of school	Sampling method	mean / median	n	DMP	DEP	DiBP	DBP	BBP	DEHP	DiNP
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4				488	144		
Fromme 2004	Germany, 2000/2001	Kindergartens	PUF	median	74	331	353		1188		458	
Fromme 2013	Germany 2011/2012	Daycare center	PUF/GFF	median	60	76	183	468	227		194	102
Gaspar 2014	USA (California), 2014	Child care or preschool	PUF	median	40		210	100	520	10	10	
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	12.6	221	> 800	228	19.1	108	35.2

PBDEs

Reference	Country, year	Type of school	Sampling method	mean / median	n	BDE100	BDE99
Wilson 2003	USA (North Carolina), 1997	Daycare center	XAD-2/QFF	mean	4	0.135	0.279
Lim 2014	Korea 2010/2011	Elementary school	PUF/GFF	mean	54	0.135	0.279
Bradman 2014	USA (California), 2010/2011	Child care or preschool	PUF	median	40	0.12	
Cequier 2014	Norway, 2012	Primary school	PUF/QFF	median	6	0.008	0.023
This study	France, 2009/2010	Primary school	PUF/QFF	median	62	<1	<1

^a 10 replicates in 1 school

GFF: Glass Fiber Filter, QFF: quartz fiber filter, SPE: solid phase extraction.

γ -HCH: gamma-hexachlorocyclohexane (Lindane), PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

Table S14. SVOCs in dust of nursery and primary schools in ng/g

Organochlorinated pesticides

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	γ -HCH	Alpha-endosulfan	Dieldrin	Endrin	4,4'-DDT
Wilson 2003	USA (North Carolina), 1997	Daycare	HVS3; 150 μ m	mean	4	19		9	70	11
Dalvie 2014	South Africa, 2010	1 Primary / 1 preschool	vacuuming in bag by technician; NA	single value	1/1		20/20			
Morgan 2014	USA (North Carolina), 2000/2001	Daycare	HVS3; 150 μ m	median	13	< 2				< 2
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100 μ m	median	89	<65.8	<65.8	<65.8	<65.8	<65.8

Organophosphated pesticides

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	Diazinon	Chlorpyrifos
Wilson 2003	USA (North Carolina), 1997	Daycare	HVS3; 150 μ m	mean	4	34	107
Dalvie 2014	South Africa, 2010	1 Primary / 1 preschool	vacuuming in bag by technician; NA	single value	1/1		60/30
Morgan 2014	USA (North Carolina), 2000/2001	Daycare	HVS3; 150 μ m	median	13	65.2	142
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100 μ m	median	89	<65.8	<65.8

Pyrethroids

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	Permethrin	Cypermethrin
Dalvie 2014	South Africa, 2010	1 Primary / 1 preschool	vacuuming in bag by technician; NA	single value	1/1		170/170
Morgan 2007	USA (Ohio), 2001	Daycare center	HVS3	median	23	1554 (cis+trans)	
Morgan 2014	USA (North Carolina), 2000/2001	Daycare	HVS3; 150 μ m	median	13	1662 (cis+trans)	
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100 μ m	median	89	279	<65.8

Phosphoric ester

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	Tributylphosphate
Fromme 2014	Germany, 2012	Daycare center	vacuuming with a dust filter holder	median	10	< 300
Mizouchi 2015	Japan, 2009/2010	Elementary schools	vacuuming with paper bag ; 250 μ m	median	12	<10
Cequier 2014	Norway 2014	Primary school	vacuuming using forensic filter ; large particles and hair removed	median	6	43.5
Brommer 2015	UK, 2011/2012	Primary schools / daycare centers	vacuuming in a 25 μ m nylon sock	median	28	120
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100 μ m	median	89	103

PAHs

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)pyrene
Wilson 2003	USA (North Carolina), 1997	Daycare	HVS3 vacuuming; 150 μ m	mean	4	25	338	45	437	354	191
Langer 2010	Denmark, 2009	Daycare center	Vacuuming on a glass fiber filter; -	median	151					98	11
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100 μ m	median	89	<65.8	363	<65.8	184	285	<65.8

PCBs

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	PCB31	PCB28	PCB52	PCB101	PCB77	PCB118	PCB153	PCB105	PCB138	PCB180
Wilson 2003	USA (North Carolina), 1997	daycare	HVS3 vacuuming; 150µm	mean	4		37	32	19	4	20	17	11	19	11
Harrad 2010	UK, 2007/2008	primary school	vacuuming in a 25µm mesh size sock; -	median	36	3.6	3.6	2.8	1.6		1.1	1.7		1.6	0.7
This study	France, 2009/2010	primary school	vacuuming in cellulose thimble; 100µm	median	89	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3	<26.3

Phthalates

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	DMP	DEP	DiBP	DBP	BBP	DEHP	DiNP
Wilson 2003	USA (North Carolina), 1997	Daycare	HVS3 vacuuming; 150µm	mean	4				1 870	3 720		
Langer 2010	Denmark, 2009	Daycare center	Vacuuming on a glass fiber filter; -	median	151		2 200	23 000	38 000	17 000	500 000	
Kim 2013	Seoul, 2012	Nursery school	vacuuming of surface dust in thimble; 100µm	median	50	2 100			52 000	50 400	3 030 000	946 000
Fromme 2013	Germany 2011/2012	Daycare center	Vacuuming on a glass fiber filter; -	median	60-63	300	1 400	20 000	21 000	6 000		302 000
Wallner 2012	Austria, 2012	Primary school	vacuuming by school personnel; 63µm	median	36					34 000		
Clausen 2003	Denmark, 2003	School	HVS3 vacuuming; 500µm	mean	15							3 214 000
Gaspar 2014	USA (California), 2010/2011	Child care or preschool	HVS3 vacuuming on carpet; 150µm	median	39		1 400	9 300	13 700	46 800	172 200	
Hutter 2013	Austria, 2012	Elementary schools	vacuuming by school personnel; 63µm	median	9							3 350 000
This study	France, 2009/2010	Primary school	vacuuming in cellulose thimble; 100µm	median	89	252	2 890	> 52 600	38 200	105 000	1 430 000	1 030 000

PBDEs

Reference	Country, year	Type of school	Sampling method; sieving fraction	mean / median	n	BDE100	BDE99
Wilson 2003	USA (North Carolina), 1997	daycare	HVS3 vacuuming; 150µm	mean	4		
Harrad 2010	UK, 2007/2008	primary school	vacuuming in a 25µm mesh size sock; -	median	36	6.6	36
Wu 2010	South Korea, 2010	Elementary school	vacuuming in washable dust collector; 212µm	medians	13/6	1,16/3,54	6,44/50,9
Lim 2014	Korea 2010/2011	Elementary school	vacuuming in bag by technician; 500µm	mean	54	67.7	215.8
Bradman 2014	USA (California), 2010/2011	Child care or preschool	HVS3 vacuuming on carpet; 150µm	median	39	211.5	1031.1
Toms 2015	Australia, 2011/2012	primary school	vacuuming in a 25µm mesh size sock; 500 µm	mean	28	10.0	101.7
Cequier 2014	Norway 2014	Primary school	vacuuming using forensic filter ; large particles and hair removed	median	6	7.95	42.4
This study	France, 2009/2010	primary school	vacuuming in cellulose thimble; 100µm	median	89	<65.8	<65.8

HVS3: High Volume Small Surface Sampler

γ-HCH: gamma-hexachlorocyclohexane (Lindane), 4,4'-DDT: dichlorodiphenyltrichloroethane, PAHs: polycyclic aromatic hydrocarbons, PCBs: polychlorobiphenyls, DMP: dimethyl-phthalate, DEP: diethyl phthalate, DiBP: diisobutyl-phthalate, DBP: dibutyl-phthalate, BBP: butyl benzyl phthalate, DEHP: bis(2-ethylhexyl)-phthalate, DiNP: diisononyl-phthalate, PBDEs: polybromodiphenylethers.

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