

SUPPLEMENTARY MATERIAL

Bisphenols, benzophenones, and bisphenol A diglycidyl ethers in textiles and infant clothing

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Standards and reagents

Analytical method: Chemicals and reagents:

Analytical standards of BPA ($\geq 97\%$), 4, 4'-(hexafluoroisopropylidene)-diphenol (BPAF, $\sim 97\%$), 4, 4'-(1-phenylethylidene)bisphenol (BPAP, $\sim 99\%$), 4, 4'-sulfonyldiphenol (BPS, $\sim 98\%$), 4, 4'-dihydroxydiphenylmethane (BPF, $\sim 98\%$), 4, 4'-(1,4-phenylenediisopropylidene)bisphenol (BPP, $\sim 99\%$), 4, 4'-cyclo-hexylidenebisphenol (BPZ, $\sim 98\%$), BADGE ($\geq 97\%$), bisphenol A (2, 3-dihydroxypropyl) glycidyl ether (BADGE $\cdot$ H₂O, $\geq 97\%$), bisphenol A (3-chloro-2-hydroxypropyl) glycidyl ether (BADGE $\cdot$ HCl, $\sim 95\%$), bisphenol A bis(2,3-dihydroxypropyl) glycidyl ether (BADGE $\cdot$ 2H₂O, $\geq 97\%$), bisphenol A bis(3-chloro-2-hydroxypropyl) glycidyl ether (BADGE $\cdot$ 2HCl, $\geq 99\%$), bisphenol A (3-chloro-2-hydroxypropyl)(2,3-dihydroxypropyl) glycidyl ether (BADGE $\cdot$ H₂O $\cdot$ HCl, $\geq 98\%$), bisphenol F diglycidyl ether (BFDGE, $\sim 97\%$), bisphenol F bis(3-chloro-2-hydroxypropyl) glycidyl ether (BFDGE $\cdot$ 2HCl, $\sim 95\%$), bisphenol F bis(2,3-dihydroxypropyl) glycidyl ether (BFDGE $\cdot$ 2H₂O, $\geq 97\%$), novolac glycidyl ether 3-ring (3R-NOGE, $\geq 90\%$), novolac glycidyl ether 4-ring (4R-NOGE, $\geq 90\%$), BP3 ($\sim 98\%$), 2,4-dihydroxybenzophenone (99%), 2,2'-dihydroxy-4-methoxybenzophenone (98%), 2,2',4,4'-tetrahydroxybenzophenone (97%), and 4-hydroxybenzophenone (98%) were purchased from Sigma-Aldrich (St. Louis, MO, USA). Analytical standard of 2, 2'-bis(4-hydroxyphenyl)butane (BPB; $\sim 98\%$) was obtained from TCI America (Portland, OR, USA). ¹³C-Isotopically labeled 2-OH-4-MeO-BP (¹³C₁₂-BP3) and ¹³C-isotopically labeled ¹³C₁₂-BPA ($\geq 99\%$) was purchased from Cambridge Isotope Laboratories (Andover, MA, USA). D₆-BADGE was obtained from Toronto Research Chemicals Inc (Toronto, Ontario, Canada). The stock solutions of target analytes and internal standards were prepared at 1 mg/mL in methanol and stored at -20 °C until further use.

Methanol, dichloromethane, acetone and ethyl acetate were purchased from J. T. Baker (Phillipsburg, NJ, USA). Milli-Q water was purified by an ultrapure water system (Barnstead International, Dubuque, IA, USA).

LC-ESI(-)MS/MS analysis of bisphenols and benzophenones

The chromatographic separation was carried out using a Shimadzu Prominence Modular HPLC system (Shimadzu Corporation, Kyoto, Japan), consisting of a system controller, binary pump, and auto sampler. Identification and quantification of target analytes were performed with an Applied Biosystems API 3200 electrospray triple quadrupole-mass spectrometer (ESI-MS/MS) (Applied Biosystems, Foster City, CA, USA). A Betasil C18 column (2.1 mm × 100 mm, 5 μm) (Thermo Electron Corporation Waltham, MA, USA) serially connected to a Javelin guard column (Betasil C18, 2.1 mm × 20 mm, 5 μm) (Thermo Electron Corporation) was used. The injection volume was 10 μL, and the mobile phase comprised methanol (A) and Milli-Q water that contained 1% (v/v) ammonium hydroxide (B). The target compounds were separated by gradient elution of mobile phase at a flow rate of 300 μL/min starting at 15% (v/v) A, held for 2 min; increased to 75% A within 3 min, held for 2 min; then further increased to 99% A within 3 min, held for 4 min; and reverted to 15% A at the 14.5th min and held for 5.5 min, for a total run time of 20 min. The MS/MS system was operated in multiple reaction monitoring (MRM) negative ion mode. Nitrogen was used as both a curtain and a collision gas. The electrospray ionization voltage was set at -4.5 kV. The curtain and collision gas flow rates were set at 25 and 2 psi, respectively, and the source heater was set at 650° C. The nebulizer gas (ion source gas 1) was set at 20 psi, and the heater gas (ion source gas 2) was set at 70 psi. The data acquisition was set at 80 ms for scan speed and 0.70 full width at half maximum (FWHM) for resolving power.

LC-ESI(+)/MS/MS analysis of BADGEs and NOGEs

For the analysis of BADGE, BFDGE, 3R-NOGE, 4R-NOGE, and their derivatives, the chromatographic separation was carried out using an Agilent 1100 Series HPLC system (Agilent Technologies Inc., Santa Clara, CA, USA). Identification and quantification of target analytes were performed with an Applied Biosystems API 2000 ESI-MS/MS. The chromatographic columns were similar to that reported above for the analysis of bisphenols. The injection volume was 10 μ L, and the mobile phase comprised methanol (A) and Milli-Q water/methanol (90:10, % v/v) that contained 2 mM ammonium acetate (B). The target compounds were separated by gradient elution of mobile phase at a flow rate of 300 μ L/min starting at 20% (v/v) A, held for 2 min; increased to 75% A within 1 min; further increased to 95% A within 2 min, held for 10 min; and reverted to 20% A at the 16th min and held for 4 min, for a total run time of 20 min. The MS/MS system was operated in MRM positive ion mode. Nitrogen was used as both a curtain and a collision gas. The electrospray ionization voltage was set at +4.5 kV. The curtain and collision gas flow rates were set at 10 psi, and the source heater was set at 450° C. The nebulizer gas (ion source gas 1) was set at 45 psi, and the heater gas (ion source gas 2) was set at 75 psi. The data acquisition was performed at a scan speed of 40 ms and a resolving power of 0.70 FWHM.

Table S1. Information on textile samples analyzed in this study

sample ID	material	description	color
R1	100% cotton	Raw textile	dark blue
R2	100% cotton	Raw textile	black
R3	100% cotton	Raw textile	light blue
R4	100% cotton	Raw textile	green
R5	100% cotton	Raw textile	purple
R6	100% cotton	Raw textile	red
R7	100% cotton	Raw textile	pink
R8	100% cotton	Raw textile	blue
R9	100% cotton	Raw textile	pink
R10	100% cotton	Raw textile	yellow
R11	100% cotton	Raw textile	brown
R12	100% cotton	Raw textile	yellow
R13	100% cotton	Raw textile	white
R14	70% polyester	Raw textile	white
R15	100% cotton	Raw textile	white
R16	100% cotton	Raw textile	black
R17	100% cotton	Raw textile	blue
R18	100% cotton	Raw textile	blue
R19	100% cotton	Raw textile	blue
d1	100% cotton	Child cloth diaper	mix
d2	100% cotton	Child cloth diaper	mix
d3	100% cotton	Child cloth diaper	mix
d4	100% cotton	Child cloth diaper	mix
t1	100% polyester	Blanket	light blue
t2	100% polyester	Blanket	dark blue
k1	97% polyester	sock of 6-12 months	yellow
k2	97% polyester	sock of 6-12 months	White
k3	97% polyester	sock of 6-12 months	dark blue
k4	97% polyester	sock of 6-12 months	White
k5	97% polyester	sock of 6-12 months	light blue
k6	97% polyester	sock of 6-12 months	light blue
k7	97% polyester	sock of 6-12 months	Grey
k8	97% polyester	sock of 6-12 months	White
k9	97% polyester	sock of 6-12 months	Grey
k10	97% polyester	sock of 6-12 months	light blue
k11	98% polyester	sock of newborn	White
k12	98% polyester	sock of newborn	Pink
k13	98% polyester	sock of newborn	mix

k14	98% polyester	sock of newborn	Mix
k15	94% nylon	cloth of 3-6 months	Pink
k16	94% nylon	cloth of 3-6 months	Yellow
k17	94% nylon	cloth of 3-6 months	White
c1	100% cotton	cloth of 6-9 months	light blue
c2	100% cotton	cloth of 6-9 months	Grey
c3	100% cotton	cloth of 6-9 months	dark blue
c4	100% cotton	cloth of 6-9 months	Blue
c5	100% cotton	cloth of 6-9 months	Pink
c6	100% cotton	cloth of 6-9 months	Red
c7	100% polyester	cloth of newborn	Blue
c8	60% cotton	cloth of newborn	Pink
c9	60% cotton	cloth of newborn	Pink
c10	60% cotton	cloth of 6-9 months	Blue
c11	60% cotton	cloth of 3-6 months	green
c12	60% cotton	ornament on cloth	Mix
c13	60% cotton	cloth of 3-6 months	white
c14	60% cotton	ornament on cloth	Mix
c15	100% cotton	cloth of 0-3 months	Mix
c16	100% cotton	cloth of 0-3 months	dark blue
c17	100% cotton	cloth of 0-3 months	Blue
c18	100% cotton	cloth of 6-9 months	orange
c19	100% cotton	cloth of 6-9 months	blue
c20	100% cotton	cloth of 6-9 months	white
c21	100% cotton	ornament on cloth	orange
c22	100% cotton	cloth of 3-6 months	dark blue
c23	100% cotton	cloth of 3-6 months	mix
c24	100% cotton	cloth of 3-6 months	mix
c25	100% cotton	cloth of 12 months	mix
c26	100% cotton	cloth of 12 months	yellow
c27	60% cotton	cloth of newborn	mix
c28	60% cotton	cloth of newborn	black
c29	60% cotton	cloth of newborn	mix
c30	100% polyester	cloth of newborn	pink
c31	60% cotton	cloth of 0-3 months	white
c32	100% polyester	cloth of 0-3 months	white
c33	100% polyester	cloth of 0-3 months	yellow
c34	100% polyester	cloth of 0-3 months	pink
c35	100% polyester	cloth of 0-3 months	red

Table S2. Limit of quantitation (LOQ) and blank (BLK) concentrations of the target analytes in this study

Analyte	LOQ (ng/mL)	BLK (ng/mL)
BPP	0.2	<0.2
BPAF	0.5	<0.5
BPAP	0.5	<0.5
BPZ	0.5	<0.5
BPS	1	<1
BPB	0.2	<0.2
BPA	1	<1
BPF	5	<5
BP3	2	<2
4-OH-BP	0.5	<0.5
BP-1	0.5	<0.5
BP-8	0.5	<0.5
BADGE•2H ₂ O	0.5	2.43
BADGE•H ₂ O	0.2	<LOQ
BADGE	0.1	<LOQ
BADGE•HCl•H ₂ O	0.2	<LOQ
BADGE•HCl	0.2	<LOQ
BADGE•2HCl	1	<LOQ
BFDGE	0.2	<LOQ
BFDGE•2HCl	0.2	<LOQ
BFDGE•2H ₂ O	1	<LOQ
3R-NOGE	0.1	<LOQ
4R-NOGE	1	<LOQ

Table S3. Method limit of quantitation (MLOQ) and relative recoveries of the target analytes in this study

Analyte	MLOQ (ng/mL)	MLOQ (ng/g)	Relative Recovery (%)			RSD ^d (%)
			Material 1 ^a	Material 2 ^b	Material 3 ^c	
BPP	1	0.74	110±2.41	133±25.8	56.2±8.67	2.19
BPAF	1	0.74	103±4.03	101±8.37	89.4±9.38	3.93
BPAP	1.4	1.03	105±5.29	97.6±10.9	76.1±13.7	5.03
BPZ	2	1.47	100±2.90	111±8.48	66.9±13.6	2.88
BPS	1	0.74	97.1±40.7	82.0±46.5	97.2±28.6	29.5
BPA	3	2.21	100±3.33	104±2.53	102±1.64	3.32
BPF	20	14.71	93.3±16.1	138±12.6	68.3±14.0	17.2
BP3	3	2.21	95.8±3.42	105±4.78	98.3±3.41	3.57
4-OH-BP	2	1.47	81.9±5.92	86.5±2.49	115±2.86	7.23
BP-1	1.5	1.1	73.8±6.42	93.4±1.59	112±3.13	8.7
BP-8	1	0.74	82.0±0.62	89.9±9.02	124±8.18	0.76
BADGE•2H ₂ O	2	1.47	91.2±6.87	73.4±5.34	67.0±15.0	7.53
BADGE•H ₂ O	2	1.47	111±12.7	119±16.6	101±18.5	11.4
BADGE	1	0.74	99.0±6.46	98.5±9.35	84.5±3.66	6.52
BADGE•HCl•H ₂ O	2	1.47	101±12.6	99.1±22.6	98.7±8.39	12.4
BADGE•HCl	2	1.47	101±7.35	104±17.9	74.5±1.75	7.28
BADGE•2HCl	5	3.68	108±11.9	98.8±21.6	78.2±6.72	11.0
BFDGE	2	1.47	99.6±14.3	103±13.8	98.2±5.70	14.3
BFDGE•2HCl	2	1.47	96.8±14.0	104±7.44	92.3±4.58	14.5
BFDGE•2H ₂ O	5	3.68	108±10.1	64.4±6.11	54.9±3.94	9.42
3R-NOGE	1	0.74	103±31.2	83.2±4.65	63.8±4.02	5.59
4R-NOGE	4	2.94	84.6±5.65	85.4±26.5	57.6±7.17	6.68

^a material 1: blue pants made of 100% polyester; ^b material 2: pink jumpsuits made of 60% cotton and 40% polyester;

^c material 3: white raw denim made of 100% cotton; ^d RSD: relative standard deviation.

Table S4. Multiple reaction monitoring transitions for BADGEs and NOGEs and compound specific parameters used in the LC-MS/MS analysis

Compound	Precursor ions [M+NH ₄] ⁺ (m/z)	Product ions (m/z)	Declustering potential (V)	Entrance potential (V)	Collision energy (V)	Collision cell exit potential (V)
BADGE	358	191	16	7	20	10
BADGE•H ₂ O	376	209	18	9	18	4
BADGE•HCl	394.3	227.1	22	7	22	5
BADGE•2H ₂ O	394	209	16	7	20	10
BADGE•H ₂ O•HCl	412	227	18	6	21	11
d ₆ -BADGE	364	197	16	7	20	10
BADGE•2HCl	430.3	227.1	12	9	18	11
BFDGE	330	163.2	22	6	18	7
BFDGE•2HCl	402.2	199	20	6	20	9
BFDGE•2H ₂ O	366.5	181.2	18	5	18	10
3R-NOGE	492	163	20	9	32	10
4R-NOGE	654	163	19	10	39	7

Table S5. Multiple reaction monitoring transitions for bisphenols and benzophenones and the compound specific parameters used in the LC-MS/MS analysis

analyte	Precursor ions [M-H] ⁻ (m/z)	Product ions (m/z)	Declustering potential (V)	Entrance potential (V)	Collision energy (V)	Collision cell exit potential (V)
BPP	345	330	-58	-10	-40	-1
BPAF	335	265	-45	-3	-35	-1
BPAP	289	274	-50	-6	-35	-3
BPZ	267	173	-55	-9	-38	-1
BPS	249	108	-55	-3	-38	-1
BPA	227	212	-40	-10	-25	-2
BPF	199	93	-52	-4	-30	-1
BP3	227	211	-32	-9	-36	-7
4-OH-BP	197	92	-51	-7	-42	-1
BP-1	213	91	-43	-8	-41	-1
BP-8	243	93	-27	-10	-38	-1
¹³ C ₁₂ -BPA	239	224	-40	-10	-25	-2
¹³ C ₁₂ -BP3	233	217	-32	-9	-36	-7

Table S6. Concentrations of the target analytes in the textile samples sorted by the level of manufacturing process

	d	mean	SD	median	range
raw textiles (n=19)					
BPA	6	105.3	418.2	0.016	< 2.21-1830
BPS	7	6.19	15.87	0.29	< 0.74-67.5
BP3	7	13.4	36.2	0.59	< 2.21-157.3
BP1	1	n.a.	n.a.	n.a.	1.21
BADGE•2H ₂ O	6	2.32	3.5	0.77	<1.47-12.04
BADGE•HCl•H ₂ O	12	21.12	17.57	15.83	<1.47-62.9
BFDGE	13	43.79	38.43	31.29	<1.47-132
3R-NOGE	12	40.89	33.99	28.82	<0.74-126.3
Diaper/blanket (n=6)					
BPA	6	37.3	27.2	38.7	6.29-73.1
BPS	1	n.a.	n.a.	n.a.	1.09
BPP	2	n.a.	n.a.	n.a.	1.10; 3.04
BP3	1	n.a.	n.a.	n.a.	5.56
BFDGE	1	n.a.	n.a.	n.a.	9.49
3R-NOGE	3	3.53	4.28	1.71	<0.74-11.1
clothing (n=52)					
BPA	51	499	2030	20.1	< 2.21-13285
BPS	33	19.9	70.7	1.31	< 0.74-394
BPF	4	9.65	30.4	0.71	< 14.7-194
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	46	11.3	11.1	8.19	< 2.21-55
4-OH-BP	6	0.57	1.2	0.16	<1.47-7.66
BADGE•2H ₂ O	11	1.85	2.75	0.78	<1.47-13.1
BADGE	6	0.33	0.74	0.07	<0.74-4.37
BFDGE	8	3.62	11.8	0.34	<1.47-81.9
BFDGE•2H ₂ O	1	n.a.	n.a.	n.a.	79
3R-NOGE	4	4.52	24.6	0.0005	<0.74-174
4R-NOGE	9	2.4	4.16	1.02	<2.94-27.2

Table S7. Concentrations of the target analytes in the textile samples sorted by the fabric material

	d	mean	SD	median	range
cotton (n=29)					
BPA	28	15.5	21	8.15	< 2.21-111
BPS	19	3.25	4.29	1.76	< 0.74-16.7
BPF	2	n.a.	n.a.	n.a.	63.2; 194
BP3	26	12.6	13.5	7.5	< 2.21-41.8
4-OH-BP	1	n.a.	n.a.	n.a.	1.96
BADGE•2H2O	2	n.a.	n.a.	n.a.	2.77; 3.13
BADGE	6	0.54	0.94	0.18	<0.74-4.37
BFDGE	2	n.a.	n.a.	n.a.	7.79; 9.70
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	4	8.08	32.8	0.007	<0.74-174
4R-NOGE	2	n.a.	n.a.	n.a.	3.94; 6.31
synthetic (n=23)					
BPA	23	1110	2980	216	2.29-13285
BPS	14	41	104	1.1	< 0.74-394
BPF	2	n.a.	n.a.	n.a.	36.6; 88.4
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	21	9.73	6.63	8.75	< 2.21-31.7
4-OH-BP	5	0.96	1.67	0.32	<1.47-7.66
BADGE•2H2O	9	3.37	3.55	1.93	<1.47-13.1
BFDGE	6	6.11	17.3	0.48	<1.47-81.9
4R-NOGE	7	4.09	5.7	2.1	<2.94-27.2
60% cotton (n=11)					
BPA	11	26.8	30.1	21.7	6.64-111
BPS	9	5.24	5.54	3.33	< 0.74-16.7
BPF	2	n.a.	n.a.	n.a.	63.2; 194
BP3	11	17.5	16.4	13.6	2.35-55
4-OH-BP	1	n.a.	n.a.	n.a.	1.96
BADGE•2H2O	1	n.a.	n.a.	n.a.	2.77
BADGE	2	n.a.	n.a.	n.a.	0.88; 2.67
BFDGE	1	n.a.	n.a.	n.a.	9.7
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	3	19.2	52.4	0.03	<0.74-174
4R-NOGE	2	n.a.	n.a.	n.a.	3.94; 6.31
100% cotton (n=18)					
BPA	17	8.64	7.9	5.56	< 2.21-27.4
BPS	9	2.02	2.87	1.03	< 0.74-10.6
BP3	15	9.53	11	6.68	< 2.21-41.8
BADGE•2H2O	1	n.a.	n.a.	n.a.	3.13
BADGE	4	0.58	1.04	0.18	<0.74-4.37

BFDGE	1	n.a.	n.a.	n.a.	7.79
3R-NOGE	1	n.a.	n.a.	n.a.	21.6
100% polyester (n=6)					
BPA	6	15.3	10.5	15.5	2.29-29.3
BPS	4	1.35	1.05	1.15	< 0.74-3.2
BP3	6	12.7	5.62	10.4	8.19-22.7
4-OH-BP	2	n.a.	n.a.	n.a.	2.19; 2.94
BADGE•2H2O	1	n.a.	n.a.	n.a.	5.41
BFDGE	4	18.7	31.5	7.13	<1.47-81.9
94% nylon (n=3)					
BPA	3	15.7	4.99	14.6	11.4-21.2
BPF	2	n.a.	n.a.	n.a.	88.4; 36.6
BP3	3	10.1	0.22	10.1	9.93-10.4
BADGE•2H2O	1	n.a.	n.a.	n.a.	13.1
97% polyester (n=10)					
BPA	10	2300	4330	396	207-13285
BPS	6	53.3	100	1.08	< 0.74-275
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	8	8.39	8.65	5.91	< 2.21-31.7
4-OH-BP	3	1.27	2.38	0.22	<1.47-7.66
BADGE•2H2O	6	4.79	3.23	4.3	<1.47-10.5
4R-NOGE	7	7.65	7.28	6.34	<2.94-27.2
98% polyester (n=4)					
BPA	4	600	484	487	267-1240
BPS	4	101	196	3.2	1.38-394
BP3	4	8.06	4.9	7.95	3.02-13.3
BADGE•2H2O	1	n.a.	n.a.	n.a.	2.25
BFDGE	2	n.a.	n.a.	n.a.	14.5; 18.9

Table S8. Concentrations of the target analytes in the textile samples sorted by the color

	d	mean	SD	median	range
colored (n=43)					
BPA	42	534	2230	14.6	< 2.21-13285
BPS	29	23.9	77.3	1.76	< 0.74-394
BPF	3	11.8	33.1	1.37	< 14.7-194
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	40	11.4	11.3	8.18	< 2.21-55
4-OH-BP	6	0.66	1.29	0.21	<1.47-7.66
BADGE•2H2O	7	1.39	1.36	0.93	<1.47-5.48
BADGE	4	0.32	0.79	0.05	<0.74-4.37
BFDGE	8	3.96	12.8	0.42	<1.47-81.9
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	4	5.46	27	0.001	<0.74-174
4R-NOGE	5	1.83	4.49	0.35	<2.94-27.2
white (n=9)					
BPA	9	332	439	31.5	8.42-1240
BPS	4	1.21	1.14	0.71	< 0.74-3.33
BPF	1	n.a.	n.a.	n.a.	36.6
BP3	7	10.8	10.5	8.3	< 2.21-35.2
BADGE•2H2O	4	5.81	4.25	4.15	<1.47-13.1
BADGE	2	n.a.	n.a.	n.a.	0.88; 1.21
4R-NOGE	4	4.14	1.91	3.58	<2.94-6.9
yellow (n=4)					
BPA	3	90.8	153	21.9	< 2.21-319
BPS	1	n.a.	n.a.	n.a.	51.7
BPF	1	n.a.	n.a.	n.a.	88.4
BP3	3	7.63	2.58	8	< 2.21-9.93
4-OH-BP	2	n.a.	n.a.	n.a.	1.57; 2.19
BADGE	1	n.a.	n.a.	n.a.	1.42
BFDGE	1	n.a.	n.a.	n.a.	10.7
black (n=1)					
BPA	1	n.a.	n.a.	n.a.	10.6
BPS	1	n.a.	n.a.	n.a.	13.9
BP3	1	n.a.	n.a.	n.a.	15.2
blue (n=13)					
BPA	13	86.9	136	7.88	2.29-411
BPS	9	37.6	90.4	1.74	< 0.74-275
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	12	8.72	9.01	5.44	< 2.21-33
BADGE•2H2O	2	n.a.	n.a.	n.a.	3.62; 5.41
BADGE	1	n.a.	n.a.	n.a.	1.13

4R-NOGE	2	n.a.	n.a.	n.a.	5.3; 27.2
green (n=1)					
BPA	1	n.a.	n.a.	n.a.	27.2
BP3	1	n.a.	n.a.	n.a.	5.65
grey (n=3)					
BPA	3	6630	6640	6602	2.31-13285
BPS	2	n.a.	n.a.	n.a.	1.07; 2.04
BP3	3	15.6	14.5	11.7	3.45-31.7
4-OH-BP	2	n.a.	n.a.	n.a.	2.32; 7.66
BADGE•2H2O	2	n.a.	n.a.	n.a.	5.23; 5.48
4R-NOGE	2	n.a.	n.a.	n.a.	8.39; 8.99
orange (n=2)					
BPA	2	n.a.	n.a.	n.a.	6.32; 23.8
BPS	2	n.a.	n.a.	n.a.	1.9; 10.6
BP3	2	n.a.	n.a.	n.a.	8.18; 15.7
BADGE	1	n.a.	n.a.	n.a.	4.37
BFDGE	1	n.a.	n.a.	n.a.	7.79
3R-NOGE	1	n.a.	n.a.	n.a.	21.6
pink (n=7)					
BPA	7	36.2	66.6	7.31	2.9-186
BPS	5	58.3	148	1.79	< 0.74-394
BPF	1	n.a.	n.a.	n.a.	194
BP3	6	8.8	4.08	8.75	< 2.21-13.6
4-OH-BP	1	n.a.	n.a.	n.a.	2.94
BADGE•2H2O	1	n.a.	n.a.	n.a.	2.25
BFDGE	3	13.7	30.3	0.31	<1.47-81.9
3R-NOGE	1	n.a.	n.a.	n.a.	3.17
red (n=2)					
BPA	2	n.a.	n.a.	n.a.	4.79; 12.1
BPS	1	n.a.	n.a.	n.a.	3.2
BP3	2	n.a.	n.a.	n.a.	1.69; 11.1
BFDGE	1	n.a.	n.a.	n.a.	15.2
mix (n=10)					
BPA	10	124	220	27.3	3.8-708
BPS	8	4.29	5.16	2.44	< 0.74-16.7
BPF	1	n.a.	n.a.	n.a.	63.2
BP3	10	18.3	17.9	11.2	2.35-75
4-OH-BP	1	n.a.	n.a.	n.a.	1.96
BADGE•2H2O	2	n.a.	n.a.	n.a.	2.77; 3.13
BADGE	1	n.a.	n.a.	n.a.	2.67
BFDGE	2	n.a.	n.a.	n.a.	14.5; 18.9
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	2	n.a.	n.a.	n.a.	32.6; 174
4R-NOGE	1	n.a.	n.a.	n.a.	6.31

Higher mean concentrations of BPA and BPS were observed in colored clothing than in white textiles (Figure 2c; Table S6). Highest mean BPA concentration was found in grey (6630 ± 6640 ng/g), followed by mix (124 ± 220 ng/g), yellow (90.8 ± 153 ng/g), blue (86.9 ± 136 ng/g), and pink (36.2 ± 66.6 ng/g) (Table S6). For BPS, the highest mean concentration was observed in pink (58.3 ± 148 ng/g), followed by blue (37.6 ± 90.4 ng/g) (Table S6). BP3 level didn't show much variability between clothing with different colors (Table S6).

Table S9. Concentrations of the target analytes in the textile samples sorted by the use

	d	mean	SD	median	range
clothes (n=38)					
BPA	37	15.5	18.7	9.92	< 2.21-111
BPS	23	2.72	3.89	1.23	< 0.74-16.7
BPF	4	12.9	35.1	1.32	< 14.7-194
BP3	35	12.4	12	9.18	< 2.21-55
4-OH-BP	3	0.72	0.61	0.53	<1.47-2.94
BADGE•2H2O	4	0.82	2.31	0.08	<1.47-13.1
BADGE	6	0.43	0.84	0.12	<0.74-4.37
BFDGE	6	3.67	13.5	0.15	<1.47-81.9
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	4	6.17	28.7	0.002	<0.74-174
4R-NOGE	2	n.a.	n.a.	n.a.	3.94; 6.31
sock (n=14)					
BPA	14	1811	3697	396	186-13285
BPS	10	66.8	128	5.92	< 0.74-394
BP3	12	8.27	7.6	5.92	< 2.21-31.7
4-OH-BP	3	0.92	2.06	0.1	<1.47-7.66
BADGE•2H2O	7	3.62	3.28	2.15	<1.47-10.5
BFDGE	2	n.a.	n.a.	n.a.	14.5; 18.9
4R-NOGE	7	5.97	6.68	4.32	<2.94-27.2
clothes of 0-3 months (n=8)					
BPA	8	15.6	9.08	15.5	3.02-29.3
BPS	6	1.38	0.92	1.14	< 0.74-3.20
BP3	8	10.3	3.41	9.66	5.94-15.7
4-OH-BP	2	n.a.	n.a.	n.a.	2.19; 2.94
BFDGE	3	13.9	28.1	1.47	<1.47-81.9
4R-NOGE	1	n.a.	n.a.	n.a.	3.94
clothes of 12 months (n=2)					
BPA	1	n.a.	n.a.	n.a.	3.8
BP3	1	n.a.	n.a.	n.a.	11.7
BADGE	1	n.a.	n.a.	n.a.	1.42
clothes of 3-6 months (n=10)					
BPA	10	28.3	30.4	21.4	3.62-111
BPS	6	4.02	5.32	1.7	< 0.74-16.7
BPF	2	n.a.	n.a.	n.a.	36.6; 88.4
BP3	10	16.8	13.5	10.3	5.65-41.8
4-OH-BP	1	n.a.	n.a.	n.a.	1.96
BADGE•2H2O	3	2.07	4.03	0.35	<1.47-13.1
BADGE	2	n.a.	n.a.	n.a.	0.88; 1.13
BFDGE•2H2O	1	n.a.	n.a.	n.a.	79
3R-NOGE	2	n.a.	n.a.	n.a.	32.6; 174
4R-NOGE	1	n.a.	n.a.	n.a.	6.31
clothes of 6-9 months (n=11)					

BPA	11	7.4	6.12	6.32	2.31-23.8
BPS	5	1.91	3.02	0.7	< 0.74-10.6
BP3	9	7.62	9.46	3.91	< 2.21-33
BADGE	2	n.a.	n.a.	n.a.	1.21; 4.37
BFDGE	1	n.a.	n.a.	n.a.	7.79
3R-NOGE	1	n.a.	n.a.	n.a.	21.6
clothes of newborn (n=7)					
BPA	7	13.6	12.6	7.31	2.29-35.6
BPS	6	4.37	4.79	1.82	< 0.74-13.9
BPF	2	n.a.	n.a.	n.a.	63.2; 194
BP3	7	17.4	18	13.6	2.35-55
BADGE•2H2O	1	n.a.	n.a.	n.a.	5.41
BADGE	1	n.a.	n.a.	n.a.	2.67
BFDGE	2	n.a.	n.a.	n.a.	3.55; 9.70
3R-NOGE	1	n.a.	n.a.	n.a.	3.17
sock of 6-12 months (n=10)					
BPA	10	2300	4330	396	207-13285
BPS	6	53.3	100	1.09	< 0.74-275
BPP	2	n.a.	n.a.	n.a.	2.18; 7.96
BP3	8	8.39	8.65	5.92	< 2.21-31.7
4-OH-BP	3	1.26	2.38	0.22	<1.47-7.66
BADGE•2H2O	6	4.79	3.23	4.3	<1.47-10.5
4R-NOGE	7	7.65	7.28	6.34	<2.94-27.2
sock of newborn (n=4)					
BPA	4	600	484	487	186-1240
BPS	4	101	196	3.2	1.38-394
BP3	4	8.06	4.9	7.95	3.02-13.3
BADGE•2H2O	1	n.a.	n.a.	n.a.	2.25
BFDGE	2	n.a.	n.a.	n.a.	14.5; 18.9

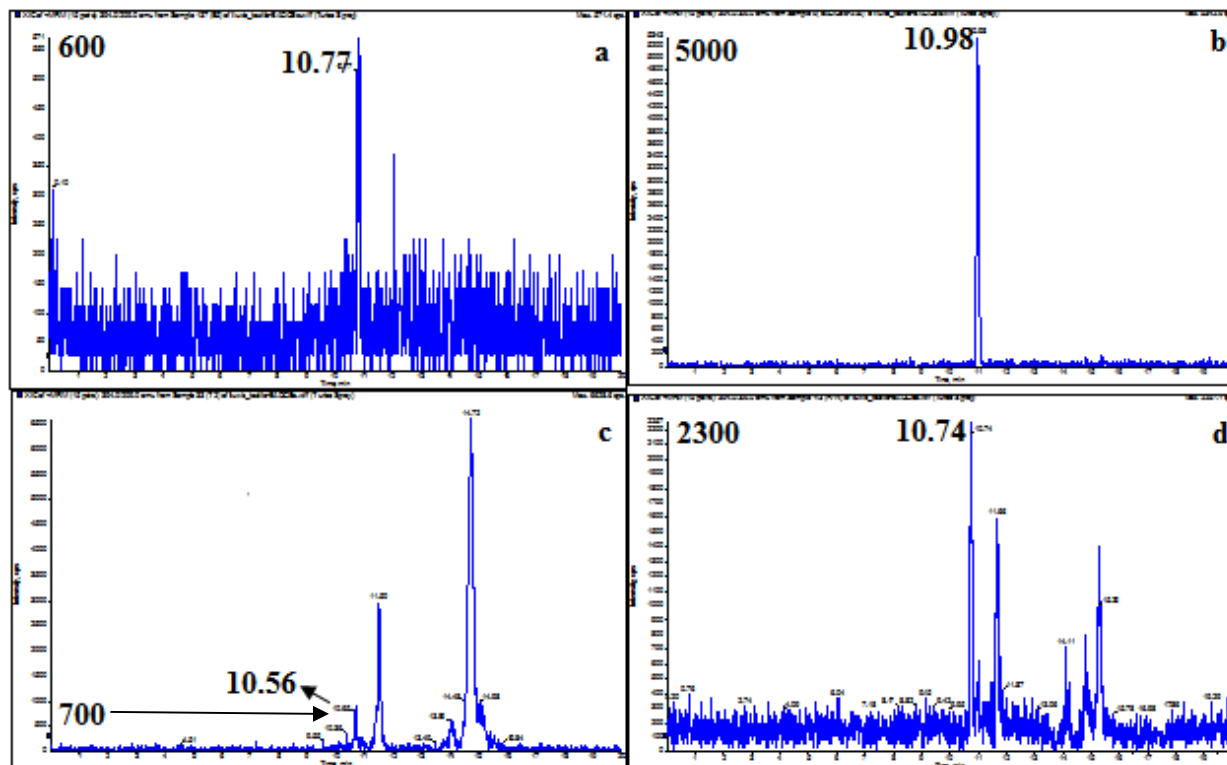


Figure S1. Chromatograms of BADGE • 2H₂O in a) blank (1 ng/mL); b) calibration standard in methanol at MLOQ level (2 ng/mL); c) the textile sample used to determine the MLOQ of BADGE • 2H₂O (1.4 ng/mL, after subtracting the blank level); d) a low level sample (2 ng/mL, after subtracting the blank level).