

**Biomonitoring California  
Priority Chemicals  
October 2017**

The following is a list of priority chemicals for Biomonitoring California.<sup>a</sup> The Scientific Guidance Panel (SGP) recommends priority chemicals from the designated chemicals list.

Targets for measurement in biomonitoring studies could include the parent chemical, metabolites and other chemical products formed in the body or the environment (e.g., hemoglobin adduct; environmental degradation product). The approach for biomonitoring a chemical may change as methods development proceeds. For some of the parent chemicals listed below, metabolites or other targets for measurement are shown indented underneath. Chemicals are grouped into categories (like “metals” and “pesticides”); some are included in more than one category. The Program determines the chemicals that are actually biomonitored and the appropriate targets for measurement. To jump to each footnote referenced in the list below, click on the relevant number.

**Brominated and Chlorinated Organic  
Compounds used as Flame  
Retardants <sup>1</sup>**

Allyl 2,4,6-tribromophenyl ether (ATE)  
2,2-Bis(bromomethyl)-1,3-propanediol  
2,2-Bis(chloromethyl)trimethylene bis[bis(2-chloroethyl)phosphate]  
Bis(2-ethyl-1-hexyl)tetrabromophthalate (TBPH)  
Bis(hexachlorocyclopentadieno)cyclooctane (Dechlorane Plus)  
1,2-Bis(2,4,6-tribromophenoxy)ethane (BTBPE)  
2-Bromoallyl-2,4,6-tribromophenyl ether (BATE)  
Chlorendic acid  
Decabromodiphenylethane (DBDPE)  
1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBECH)  
2,4-Dibromophenol  
2,3-Dibromopropyl-2,4,6-tribromophenyl ether (DPTE)  
2-Ethyl-1-hexyl-2,3,4,5-tetrabromobenzoate (TBB)  
*N,N*-Ethylenebis(tetrabromophthalimide)  
Hexabromobenzene (HBB)  
2,2',4,4',5,5'-Hexabromobiphenyl (BB 153)  
Hexabromocyclododecane (HBCD)  
Hexachlorocyclopentadienyl-dibromocyclooctane  
Isobutoxypentabromocyclododecanes (iBPBCDs)  
Octabromotrimethylphenylindane (OBIND)  
Pentabromoethylbenzene (PBEB)  
Pentabromophenol (PBP)  
Pentabromotoluene (PBT)  
Short-chain chlorinated paraffins  
Tetrabromobisphenol A (TBBPA)  
Tetrabromobisphenol A bis(2,3-dibromopropyl) ether  
Tetrabromobisphenol A bis(2-hydroxyethyl) ether (TBBPA-DBPE)  
Tetrabromophthalic anhydride

2,3,5,6-Tetrabromo-*p*-xylene  
2,4,6-Tribromophenol  
Tris(2-chloroethyl)phosphate (TCEP)  
Tris(1-chloro-2-propyl)phosphate (TCPP)  
Tris(2,3-dibromopropyl) isocyanurate  
Tris(2,3-dibromopropyl)phosphate (TDBPP)  
Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)  
Tris(2,3-dichloro-1-propyl)phosphate

**Polybrominated diphenyl ethers (PBDEs)**

2,2',4-Tribromodiphenyl ether (BDE 17)  
2,4,4'-Tribromodiphenyl ether (BDE 28)  
2,2',4,4'-Tetrabromodiphenyl ether (BDE 47)  
2,3',4,4'-Tetrabromodiphenyl ether (BDE 66)  
2,2',3,4,4'-Pentabromodiphenyl ether (BDE 85)  
2,2',4,4',5-Pentabromodiphenyl ether (BDE 99)  
2,2',4,4',6-Pentabromodiphenyl ether (BDE 100)  
2,2',4,4',5,5'-Hexabromodiphenyl ether (BDE 153)  
2,2',4,4',5,6'-Hexabromodiphenyl ether (BDE 154)  
2,2',3,4,4',5',6-Heptabromodiphenyl ether (BDE 183)  
2,2',3,3',4,4',5,6'-Octabromodiphenyl ether (BDE 196)  
2,2',3,3',4,4',6,6'-Octabromodiphenyl ether (BDE 197)  
2,2',3,3',4,5',6,6'-Octabromodiphenyl ether (BDE 201)  
2,2',3,3',5,5',6,6'-Octabromodiphenyl ether (BDE 202)  
2,2',3,4,4',5,5',6-Octabromodiphenyl ether (BDE 203)  
2,2',3,3',4,4',5,5',6-Nonabromodiphenyl ether (BDE 206)  
2,2',3,3',4,4',5,6,6'-Nonabromodiphenyl ether (BDE 207)  
2,2',3,3',4,5,5',6,6'-Nonabromodiphenyl ether (BDE 208)

a. California Environmental Contaminant Biomonitoring Program, codified at Health and Safety Code section 105440 et seq.

2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether  
(BDE 209)

**Hydroxy-PBDEs (Metabolites of PBDEs)**

4'-Hydroxy-BDE 17  
4-Hydroxy-BDE 42  
3-Hydroxy-BDE 47  
5-Hydroxy-BDE 47  
6-Hydroxy-BDE 47  
4'-Hydroxy-BDE 49  
2'-Hydroxy-BDE 68  
4-Hydroxy-BDE 90  
5'-Hydroxy-BDE 99  
6'-Hydroxy-BDE 99  
3-Hydroxy-BDE 100  
5'-Hydroxy-BDE 100  
4'-Hydroxy-BDE 101  
4'-Hydroxy-BDE 103

**Cyclosiloxanes <sup>1</sup>**

Decamethylcyclopentasiloxane (D5)  
Dodecamethylcyclohexasiloxane (D6)  
Octamethylcyclotetrasiloxane (D4)

**Diesel Exhaust <sup>2</sup>**

**Diglycidyl Ethers of *p,p'*-Bisphenols <sup>1</sup>**

Bisphenol A diglycidyl ether (BADGE)  
Bisphenol F diglycidyl ether (BFDGE)

**Environmental Phenols <sup>3</sup>**

***p,p'*-Bisphenols <sup>1</sup>**

Bisphenol A (BPA)  
Bisphenol AF (BPAF)  
Bisphenol B (BPB)  
Bisphenol F (BPF)  
Bisphenol S (BPS)  
4,4'-Sulfonylbis[2-(2-propen-1-yl)phenol] (TGSA)

**Brominated phenols <sup>3,4</sup>**

2,4-Dibromophenol  
Pentabromophenol (PBP)  
Tetrabromobisphenol-A (TBBPA)  
2,4,6-Tribromophenol

**Chlorinated phenols <sup>3,5</sup>**

2,4-Dichlorophenol  
2,5-Dichlorophenol  
Pentachlorophenol  
2,4,5-Trichlorophenol  
2,4,6-Trichlorophenol

Triclosan

**Parabens <sup>3</sup>**

Butylparaben <sup>6</sup>  
Ethylparaben  
Methylparaben  
*n*-Propylparaben

**Metals <sup>3</sup>**

Antimony <sup>7</sup>  
Arsenic  
    Arsenic (V) acid  
    Arsenobetaine  
    Arsenocholine  
    Arsenous (III) acid  
    Dimethylarsinic acid  
    Monomethylarsonic acid  
    Trimethylarsine oxide  
Beryllium <sup>7</sup>  
Cadmium  
Cobalt  
Lead  
Manganese  
Mercury  
Molybdenum  
Thallium  
Tungsten  
Uranium

**Non-Halogenated Aromatic  
Phosphates <sup>1</sup>**

Bisphenol A bis(diphenyl phosphate)  
Butylated triphenyl phosphate  
*t*-Butylphenyl diphenyl phosphate  
2-Ethylhexyl diphenyl phosphate  
Isodecyl diphenyl phosphate  
Isopropyl phenyl diphenyl phosphate  
Isopropylated triphenyl phosphate  
Resorcinol bis(diphenyl phosphate)  
Tricresyl phosphate  
Triphenyl phosphate

**Perchlorate**

**Perfluoroalkyl and Polyfluoroalkyl  
Substances (PFASs) <sup>1,11</sup>**

Ammonium 4,8-dioxa-3H-perfluorononanoate  
(ADONA)  
Bis(perfluorohexyl)phosphinic acid  
Bis(perfluorooctyl)phosphinic acid  
*N*-Ethyl-perfluorooctane sulfonamido acetic acid  
6:2 Fluorotelomer acetate

8:2 Fluorotelomer acetate  
 10:2 Fluorotelomer acetate  
 6:2 Fluorotelomer acrylate  
 8:2 Fluorotelomer acrylate  
 10:2 Fluorotelomer acrylate  
 5:3 Fluorotelomer carboxylic acid  
 6:2 Fluorotelomer carboxylic acid  
 7:3 Fluorotelomer carboxylic acid  
 8:2 Fluorotelomer carboxylic acid  
 10:2 Fluorotelomer carboxylic acid  
 6:2 Fluorotelomer phosphate diester  
 6:2/8:2 Fluorotelomer phosphate diester  
 8:2 Fluorotelomer phosphate diester  
 6:2 Fluorotelomer phosphate monoester  
 4:2 Fluorotelomer sulfonic acid  
 6:2 Fluorotelomer sulfonic acid  
 8:2 Fluorotelomer sulfonic acid  
 6:2 Fluorotelomer unsaturated carboxylic acid  
 8:2 Fluorotelomer unsaturated carboxylic acid  
 10:2 Fluorotelomer unsaturated carboxylic acid  
 N-Methyl-perfluorooctane sulfonamido) acetic acid  
 Perfluorobutane sulfonic acid  
 Perfluorobutanoic acid  
 Perfluorodecanoic acid  
 Perfluorodecylphosphonic acid  
 Perfluorododecanoic acid  
 Perfluoroethylcyclohexane sulfonic acid  
 Perfluoroheptane sulfonic acid  
 Perfluoroheptanoic acid  
 Perfluorohexadecanoic acid  
 Perfluorohexane sulfonic acid  
 Perfluorohexanoic acid  
 Perfluorohexylperfluorooctylphosphinic acid  
 Perfluorohexylphosphonic acid  
 Perfluorononane sulfonic acid  
 Perfluorononanoic acid  
 Perfluorooctadecanoic acid  
 Perfluorooctane sulfonamide  
 Perfluorooctane sulfonic acid (PFOS), including linear and branched isomers  
 Perfluorooctanoic acid (PFOA), including linear and branched isomers  
 Perfluorooctylphosphonic acid  
 Perfluoropentane sulfonic acid  
 Perfluoropentanoic acid  
 Perfluorotetradecanoic acid  
 Perfluorotridecanoic acid  
 Perfluoroundecanoic acid  
 Potassium 1,1,2,2,-tetrafluoro-2-((1,1,1,2,3,3-hexafluoro-3-[(trifluorovinyl)oxy]-2-propanyl)oxy)ethanesulfonate tetrafluoroethene  
 Sodium bis-[2-(N-ethylperfluorooctane-1-sulfonamido)ethyl] phosphate  
 Sodium 2-(N-ethylperfluorooctane-1-sulfonamido)ethyl phosphate

2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid

**Pesticides<sup>3,8</sup>**

**Herbicides<sup>3</sup>**

2,4-Dichlorophenoxyacetic acid (2,4-D), salts and esters

- 2,4-Dichlorophenoxyacetic acid
- 2,4-Dichlorophenol

**Organochlorine Pesticides<sup>3</sup>**

Dichlorodiphenyltrichloroethane (DDT) (including *p,p'*-DDT and *o,p'*-DDT)  
*p,p'*-Dichlorodiphenyldichloroethene (*p,p'*-DDE)

**Organophosphate Insecticides<sup>3</sup>**

- Acephate
- Azinphos methyl
  - Dimethyldithiophosphate
  - Dimethylphosphate
  - Dimethylthiophosphate
- Chlorethoxyphos
  - Diethylphosphate
  - Diethylthiophosphate
- Chlorpyrifos
  - Diethylphosphate
  - Diethylthiophosphate
  - 3,5,6-Trichloro-2-pyridinol (TCPy)
- Chlorpyrifos methyl
  - Dimethylphosphate
  - Dimethylthiophosphate
  - 3,5,6-Trichloro-2-pyridinol (TCPy)
- Coumaphos
  - 3-Chloro-7-hydroxy-4-methyl-2H-chromen-2-one/ol
  - Diethylphosphate
  - Diethylthiophosphate
- Diazinon
  - Diethylphosphate
  - Diethylthiophosphate
  - 2-Isopropyl-4-methyl-6-hydroxypyrimidine
- Dichlorvos (DDVP)
  - Dimethylphosphate
- Dicrotophos
  - Dimethylphosphate
- Dimethoate
  - Dimethyldithiophosphate
  - Dimethylphosphate
  - Dimethylthiophosphate
- Disulfoton
  - Diethyldithiophosphate
  - Diethylphosphate
  - Diethylthiophosphate

Ethion
Diethyldithiophosphate
Diethylphosphate
Diethylthiophosphate
Fenitrothion
Dimethylphosphate
Dimethylthiophosphate
Fenthion
Dimethylphosphate
Dimethylthiophosphate
Isazophos-methyl
5-Chloro-1,2-dihydro-1-isopropyl-[3H]-1,2,4-triazol-3-one
Dimethylphosphate
Dimethylthiophosphate
Malathion
Diethyldithiophosphate
Dimethylphosphate
Dimethylthiophosphate
Malathion dicarboxylic acid
Methamidophos
Methidathion
Diethyldithiophosphate
Dimethylphosphate
Dimethylthiophosphate
Methyl parathion
Dimethylphosphate
Dimethylthiophosphate
<i>p</i> -Nitrophenol
Naled
Dimethylphosphate
Oxydemeton-methyl
Dimethylphosphate
Dimethylthiophosphate
Parathion (Ethyl parathion)
Diethylphosphate
Diethylthiophosphate
<i>p</i> -Nitrophenol
Phorate
Diethyldithiophosphate
Diethylphosphate
Diethylthiophosphate
Phosmet (Imidan)
Diethyldithiophosphate
Dimethylphosphate
Dimethylthiophosphate
Pirimiphos-methyl
2-(Diethylamino)-6-methylpyrimidin-4-ol/one
Dimethylphosphate
Dimethylthiophosphate
Sulfotep
Diethylphosphate
Diethylthiophosphate
Temephos
Dimethylphosphate
Dimethylthiophosphate

Terbufos
Diethyldithiophosphate
Diethylphosphate
Diethylthiophosphate
Tetrachlorvinphos
Dimethylphosphate
<b><u>Pyrethroid Pesticides</u></b> <sup>3</sup>
Allethrin
<i>cis/trans</i> -Dimethylvinylcyclopropane carboxylic diacid
Cyfluthrin
<i>cis</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>cis</i> -DCCA)
<i>trans</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>trans</i> -DCCA)
4-Fluoro-3-phenoxybenzoic acid
Cyhalothrin (including <i>lambda</i> - and <i>gamma</i> -)
3-Phenoxybenzoic acid (3-PBA)
Cypermethrin (including <i>cis</i> - and <i>trans</i> -)
<i>cis</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>cis</i> -DCCA)
<i>trans</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>trans</i> -DCCA)
3-Phenoxybenzoic acid (3-PBA)
Deltamethrin
<i>cis</i> -3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid
3-Phenoxybenzoic acid (3-PBA)
Fenpropathrin
3-Phenoxybenzoic acid (3-PBA)
Permethrin (including <i>cis</i> - and <i>trans</i> -)
<i>cis</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>cis</i> -DCCA)
<i>trans</i> -3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid ( <i>trans</i> -DCCA)
3-Phenoxybenzoic acid (3-PBA)
Pyrethrin 1
<i>cis/trans</i> -Dimethylvinylcyclopropane carboxylic diacid
Resmethrin
<i>cis/trans</i> -Dimethylvinylcyclopropane carboxylic diacid
Tralomethrin
3-Phenoxybenzoic acid (3-PBA)

**Other Pesticides**

1,4-Dichlorobenzene (*p*-Dichlorobenzene)  
2,5 Dichlorophenol

***ortho*-Phthalates <sup>1</sup>**

Benzylbutyl phthalate (BzBP)  
  Mono-benzyl phthalate (MBzP)  
  Mono-*n*-butyl phthalate (MnBP)  
Diallyl phthalate  
Di-*n*-butyl phthalate (DnBP)  
  Mono-*n*-butyl phthalate (MnBP)  
Di-isobutyl phthalate (DIBP)  
  Mono-isobutyl phthalate (MIBP)  
Dicyclohexyl phthalate (DCHP)  
  Mono-cyclohexyl phthalate (MCHP)  
Diethyl phthalate (DEP)  
  Mono-ethyl phthalate (MEP)  
Di-2-ethylhexyl phthalate (DEHP)  
  Mono-(2-carboxymethylhexyl) phthalate  
  Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)  
  Mono-2-ethylhexyl phthalate (MEHP)  
  Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)  
  Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)  
Di-*n*-hexyl phthalate  
Di-isodecyl phthalate (DIDP)  
  Mono-(carboxynonyl) phthalate (MCNP)  
Di-isoheptyl phthalate  
Di-isononyl phthalate (DINP)  
  Mono-(carboxyoctyl) phthalate (MCOP)  
  Mono-(hydroxyisononyl) phthalate  
  Mono-isononyl phthalate (MINP)  
  Mono-(oxoisononyl) phthalate  
Dimethyl phthalate (DMP)  
  Mono-methyl phthalate (MMP)  
Di-*n*-octyl phthalate (DnOP)  
  Mono-(3-carboxypropyl) phthalate (MCP)  
  Mono-*n*-octyl phthalate (MnOP)  
Di-*n*-pentyl phthalate  
Di-2-propylheptyl phthalate  
Diundecyl phthalate  
Di-isodecyl phthalate  
Di-isotridecyl phthalate

**Polychlorinated Biphenyls (PCBs),  
Dioxin-Like <sup>3</sup>**

**Coplanar PCBs <sup>3</sup>**

3,4,4',5-Tetrachlorobiphenyl (PCB 81)  
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)  
3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)

**Mono-*ortho*-Substituted PCBs <sup>3</sup>**

2,3,3',4,4'-Pentachlorobiphenyl (PCB 105)  
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)  
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)  
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)  
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)  
2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)

**Polychlorinated Biphenyls (PCBs),  
Non-Dioxin-Like <sup>3</sup>**

2,2',5-Trichlorobiphenyl (PCB 18)  
2,4,4'-Trichlorobiphenyl (PCB 28)  
2,2',3,5'-Tetrachlorobiphenyl (PCB 44)  
2,2',4,5'-Tetrachlorobiphenyl (PCB 49)  
2,2',5,5'-Tetrachlorobiphenyl (PCB 52)  
2,3',4,4'-Tetrachlorobiphenyl (PCB 66)  
2,4,4',5-Tetrachlorobiphenyl (PCB 74)  
2,2',3,4,5'-Pentachlorobiphenyl (PCB 87)  
2,2',4,4',5-Pentachlorobiphenyl (PCB 99)  
2,2',4,5,5'-Pentachlorobiphenyl (PCB 101)  
2,3,3',4',6-Pentachlorobiphenyl (PCB 110)  
2,2',3,3',4,4'-Hexachlorobiphenyl (PCB 128)  
2,2',3,4,4',5'-Hexachlorobiphenyl (PCB 138)  
2,2',3,4',5,5'-Hexachlorobiphenyl (PCB 146)  
2,2',3,4',5,6-Hexachlorobiphenyl (PCB 149)  
2,2',3,5,5',6-Hexachlorobiphenyl (PCB 151)  
2,2',4,4',5,5'-Hexachlorobiphenyl (PCB 153)  
2,3,3',4,4',6-Hexachlorobiphenyl (PCB 158)  
2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)  
2,2',3,3',4,5,5'-Heptachlorobiphenyl (PCB 172)  
2,2',3,3',4,5,6'-Heptachlorobiphenyl (PCB 177)  
2,2',3,3',5,5',6-Heptachlorobiphenyl (PCB 178)  
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)  
2,2',3,4,4',5,6-Heptachlorobiphenyl (PCB 183)  
2,2',3,4',5,5',6-Heptachlorobiphenyl (PCB 187)  
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (PCB 194)  
2,2',3,3',4,4',5,6-Octachlorobiphenyl (PCB 195)  
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (PCB 196)  
2,2',3,3',4,5,5',6-Octachlorobiphenyl (PCB 199)  
2,2',3,4,4',5,5',6-Octachlorobiphenyl (PCB 203)  
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (PCB 206)  
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (PCB 209)

**Polychlorinated Biphenyls (PCBs)  
Hydroxy-PCBs (Metabolites of PCBs)**

4-Hydroxy-PCB 107  
4-Hydroxy-PCB 120  
4'-Hydroxy-PCB 130  
3'-Hydroxy-PCB 138  
4-Hydroxy-PCB 146  
3-Hydroxy-PCB 153  
4'-Hydroxy-PCB 172

3'-Hydroxy-PCB 180  
4-Hydroxy-PCB 187  
4'-Hydroxy-PCB 193

**Polycyclic Aromatic Hydrocarbons  
(PAHs) [3,10](#)**

3-Hydroxybenzo[a]pyrene  
6-Hydroxychrysene  
3-Hydroxyphenanthrene

**Tobacco Smoke**

Nicotine  
Cotinine  
NNK (4-[Methylnitrosamino]-1-[3-pyridyl]-1-  
butanone)  
NNAL (4-[Methylnitrosamino]-1-(3-pyridyl)-1-  
butanol)

**Notes**

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<sup>1</sup> All members of the chemical class are priority chemicals, including, but not limited to, the chemicals listed.

<sup>2</sup> Diesel exhaust is a complex mixture that contains many components, one or more of which may be useful as an indicator for biomonitoring.

<sup>3</sup> All members of the chemical class are not priority chemicals; only the specific chemicals listed are priority chemicals.

<sup>4</sup> These brominated phenols are part of the chemical group “brominated and chlorinated organic compounds used as flame retardants”, which are listed as priority chemicals. The brominated phenols are also included in the category “environmental phenols” because the laboratory measures them with other environmental phenols.

<sup>5</sup> These chlorinated phenols, with the exception of triclosan, are metabolites of certain pesticides that are listed as priority chemicals. These chlorophenols are also included in the category “environmental phenols” because the laboratory measures them with other environmental phenols.

<sup>6</sup> Includes *n*-butylparaben and isobutylparaben.

<sup>7</sup> The SGP recommended that the Program develop methods for antimony and beryllium that meet the Program's quality assurance/quality control (QA/QC) standards.

<sup>8</sup> Fungicides, herbicides, and insecticides are grouped under the general heading of “Pesticides.”

<sup>9</sup> Includes di-*n*-butyl phthalate and di-isobutyl phthalate.

<sup>10</sup> The SGP recommended the three hydroxy-PAHs listed as priority chemicals. These three hydroxy-PAHs are metabolites of benzo[a]pyrene, chrysene and phenanthrene, respectively.

<sup>11</sup> A chemical is a perfluoroalkyl substance (also known as a “perfluorochemical”) if all carbon atoms, except for carbon atoms associated with functional groups (such as an aldehyde group), are fully fluorinated. In a polyfluoroalkyl substance, at least one (but not all) of the carbon atoms is fully fluorinated.