Biomonitoring California
Priority Chemicals
March 2024

The following is a list of priority chemicals for Biomonitoring California.[a] 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 [1]

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
Chlorinated paraffins
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)
  2,3,4,5-Tetrabromobenzoic acid (TBBA)
N,*N*′-Ethylenebis(tetrabromophthalimide)
Hexabromobenzene (HBB)
2,2′,4,4′,5,5′-Hexabromobiphenyl (PBB 153)
Hexabromocyclododecane (HBCD)
Hexachlorocyclopentadienyl-dibromocyclooctane
2-Hydroxypropyl 2-(2-hydroxyethyl)ethyl tetrabromophthalate
Isobutoxypentabromocyclododecanes (iBPBCDs)
Octabromotrimethylphenylindane (OBIND)
Pentabromoethylbenzene (PBEB)
Pentabromophenol (PBP)
Pentabromotoluene (PBT)
1,1'-Sulfonylbis[3,5-dibromo-4-(2,3-dibromopropoxy) benzene
Tetrabromobisphenol A (TBBPA)
Tetrabromobisphenol A bis(2,3-dibromopropyl) ether (TBBPA-DBPE)
Tetrabromobisphenol A bis(2-hydroxyethyl) ether
Tetrabromobisphenol A diallyl ether
Tetrabromophthalic acid, mixed esters
Tetrabromophthalic anhydride
2,3,5,6-Tetrabromo-*p*-xylene
Tetrachlorophthalic anhydride
2,4,6-Tribromophenol
Tribromoneopentylalcohol
Tris(2-chloroethyl)phosphate (TCEP)
  Bis(2-chloroethyl)phosphate (BCEP)
Tris(1-chloro-2-propyl)phosphate (TCPP)
  Bis(1-chloro-2-propyl)phosphate (BCPP)
Tris(2,3-dibromopropyl) isocyanurate
Tris(2,3-dibromopropyl)phosphate (TDBPP)
Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)
  Bis(1,3-dichloro-2-propyl)phosphate (BDCPP)
Tris(2,3-dichloro-1-propyl)phosphate
Tris(tribromoneopentyl)phosphate
2,4,6-Tris(2,4,6-tribromophenoxy)-1,3,5-triazine

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)

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

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)
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 [1]

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

Diesel Exhaust [2]

1-Nitropyrene
- 6-Hydroxy-1-nitropyrene
- 8-Hydroxy-1-nitropyrene

Diglycidyl Ethers of *p,p′*-Bisphenols [1]

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

Environmental Phenols [3]

_p,p′_-Bisphenols [1]

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 [3, 4]

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

Chlorinated phenols [3, 5]

2,4-Dichlorophenol
2,5-Dichlorophenol
~~Pentachlorophenol~~ [6]
~~2,4,5-Trichlorophenol~~ [6]
~~2,4,6-Trichlorophenol~~ [6]
Triclosan

Parabens [3]

Butylparaben [7]
Ethylparaben
Methylparaben
n-Propylparaben

Metals [3]

Antimony [8]
Arsenic
- Arsenic (V) acid
- Arsenobetaine
- Arsenocholine
- Arsenous (III) acid
- Dimethylarsinic acid
- Monomethylarsonic acid
- Trimethylarsine oxide

Beryllium [8]
Cadmium
Cobalt
Lead
Manganese
Mercury
Molybdenum
Thallium
Tungsten
Uranium

Non-Halogenated Aromatic Phosphates [1]

Bisphenol A bis(diphenyl phosphate)
Butylated triphenyl phosphate
Butyldiphenyl phosphate
2-t-Butylphenyl diphenyl phosphate
4-tert-butylphenyl diphenyl phosphate
- 4-((Tert-butyl)phenyl)phenyl phosphate (tBPPP)

Dibutylphenyl phosphate
2-Ethylhexyl diphenyl phosphate
Isodecyl diphenyl phosphate
2-Isopropylphenyl diphenyl phosphate (IPPP)
    2-((Isopropyl)phenyl)phenyl phosphate (iPPPP)
Isopropylated triphenyl phosphate
Resorcinol bis(diphenyl phosphate)
Tribenzyl phosphate (TBzP)
    Dibenzyl phosphate (DBzP)
Tricresyl phosphate (TCP)
    Dicresyl phosphates (DCPs)
Tri-*o*-cresylphosphate (ToCP)
    Di-*o*-cresylphosphate (DoCP)
Tri-*p*-cresylphosphate (TpCP)
    Di-*p*-cresylphosphate (DpCP)
Triphenyl phosphate (TPP)
    Diphenyl phosphate (DPhP)

Perchlorate

Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) [1, 9]

Ammonium 4,8-dioxa-3H-perfluorononanoate (ADONA)
Bis(perfluorohexyl)phosphinic acid (6:6 PFPiA)
Bis(perfluorooctyl)phosphinic acid (8:8 PFPiA)
6:2 Chlorinated polyfluorinated ether sulfonic acid (F-53B major)
8:2 Chlorinated polyfluorinated ether sulfonic acid (F-53B minor)
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid
N-Ethyl-*N*-(2-hydroxyethyl)perfluoro octanesulfonamide phosphate diester
N-Ethyl-*N*-(2-hydroxyethyl)perfluoro octanesulfonamide phosphate monoester
N-Ethyl-perfluorooctane sulfonamido acetic acid (Et-PFOSA-AcOH)
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 (5:3 FTCA)
6:2 Fluorotelomer carboxylic acid (6:2 FTCA)
7:3 Fluorotelomer carboxylic acid (7:3 FTCA)
8:2 Fluorotelomer carboxylic acid (8:2 FTCA)
10:2 Fluorotelomer carboxylic acid (10:2 FTCA)
6:2 Fluorotelomer phosphate diester (6:2 diPAP)
6:2/8:2 Fluorotelomer phosphate diester
8:2 Fluorotelomer phosphate diester (8:2 diPAP)
6:2 Fluorotelomer phosphate monoester (6:2 PAP)
8:2 Fluorotelomer phosphate monoester (8:2 PAP)
4:2 Fluorotelomer sulfonic acid (4:2 FTS)
6:2 Fluorotelomer sulfonic acid (6:2 FTS)
8:2 Fluorotelomer sulfonic acid (8:2 FTS)
6:2 Fluorotelomer unsaturated carboxylic acid (6:2 FTUCA)
8:2 Fluorotelomer unsaturated carboxylic acid (8:2 FTUCA)
10:2 Fluorotelomer unsaturated carboxylic acid (10:2 FTUCA)
N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH)
Perfluorobutane sulfonic acid (PFBS)
Perfluorobutanoic acid (PFBA)
Perfluorodecane sulfonic acid (PFDS)
Perfluorodecanoic acid (PFDeA, PFDA)
Perfluorodecylphosphonic acid
Perfluoro-3,6-dioxaheptanoic acid
Perfluoro-3,6-dioxa-4-methyl-7-octene sulfonic acid
Perfluorododecanoic acid (PFDoA, PFDoDA)
Perfluoro(2-ethoxyethane) sulfonic acid
Perfluoroethylcyclohexane sulfonic acid
Perfluoroheptane sulfonic acid (PFHpS)
Perfluoroheptanoic acid (PFHpA)
Perfluorohexadecanoic acid
Perfluorohexane sulfonic acid (PFHxS)
Perfluorohexanoic acid (PFHxA)
Perfluorohexylperfluorooctylphosphinic acid (6:8 PFPiA)
Perfluorohexylphosphonic acid (PFHxPA)
Perfluoro-4-methoxybutanoic acid
Perfluoro-3-methoxypropanoic acid
Perfluoro-2-methyl-3-oxahexanoic acid (GenX)
Perfluorononane sulfonic acid (PFNS)
Perfluorononanoic acid (PFNA)
Perfluorooctadecanoic acid
Perfluorooctane sulfonamide (PFOSA, PFOSAm)
Perfluorooctane sulfonic acid (PFOS), including linear and branched isomers
Perfluorooctanoic acid (PFOA), including linear and branched isomers
Perfluorooctylphosphonic acid (PFOPA)
Perfluoropentane sulfonic acid (PFPeS)
Perfluoropentanoic acid (PFPeA)
Perfluorotetradecanoic acid (PFTeDA)
Perfluorotridecanoic acid
Perfluoroundecanoic acid (PFUA, PFUnDA)

Pesticides [3, 10]

Herbicides [3]

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

Organochlorine Pesticides [3]

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

Organophosphate Insecticides [3]

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 (IMPY)

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
- Dimethyldithiophosphate
- Dimethylphosphate
- Dimethylthiophosphate
- Malathion dicarboxylic acid

Methamidophos

Methidathion
- Dimethyldithiophosphate
- Dimethylphosphate
- Dimethylthiophosphate

Methyl parathion
- Dimethylphosphate
- Dimethylthiophosphate
- *p*-Nitrophenol

Naled
- Dimethylphosphate

Oxydemeton-methyl
- Dimethylphosphate
- Dimethylthiophosphate

Parathion (Ethyl parathion)
- Diethylphosphate
- Diethylthiophosphate
- *p*-Nitrophenol

Phorate
- Diethyldithiophosphate
- Diethylphosphate
- Diethylthiophosphate

Phosmet (Imidan)
- Dimethyldithiophosphate
- 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

Quaternary Ammonium Herbicides and Pesticides [1]

Refer to the category Quaternary Ammonium Compounds (QACs) for the QA herbicides and other members of this class, some of which are registered as pesticides for antimicrobial applications.

Pyrethroid Pesticides [3]

Allethrin
- *cis/trans*-Dimethylvinylcyclopropane carboxylic diacid

Cyfluthrin
- *cis*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DCCA)
- *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*trans*-DCCA)
- 4-Fluoro-3-phenoxybenzoic acid

Cyhalothrin (including *lambda*- and *gamma*-)
- 3-Phenoxybenzoic acid (3-PBA)

Cypermethrin (including *cis*- and *trans*-)
- *cis*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DCCA)
- *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*trans*-DCCA)
- 3-Phenoxybenzoic acid (3-PBA)

Deltamethrin
- *cis*-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DBCA)
- 3-Phenoxybenzoic acid (3-PBA)

Fenpropathrin
- 3-Phenoxybenzoic acid (3-PBA)

Permethrin (including *cis*- and *trans*-)
- *cis*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*cis*-DCCA)
- *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (*trans*-DCCA)
- 3-Phenoxybenzoic acid (3-PBA)

Pyrethrin 1
- *cis/trans*-Dimethylvinylcyclopropane carboxylic diacid

Resmethrin
- *cis/trans*-Dimethylvinylcyclopropane carboxylic diacid

Tralomethrin
- 3-Phenoxybenzoic acid (3-PBA)

Other Pesticides

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

ortho-Phthalates [1]

Benzylbutyl phthalate (BzBP)
- Mono-benzyl phthalate (MBzP)
- Mono-*n*-butyl phthalate (MnBP)

Diallyl phthalate
Di-*n*-butyl phthalate (DnBP)
- Mono-n-butyl phthalate (MnBP)
- Mono-3-hydroxybutyl phthalate (MHBP)

Di-isobutyl phthalate (DIBP)
- Mono-isobutyl phthalate (MIBP)
- Mono-2-methyl-2-hydroxypropyl phthalate

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 (MCPP)
- Mono-*n*-octyl phthalate (MnOP)

Di-*n*-pentyl phthalate
Di-2-propylheptyl phthalate
Diundecyl phthalate
Di-isoundecyl phthalate
Di-isotridecyl phthalate

Polychlorinated Biphenyls (PCBs), Dioxin-Like [3]

Coplanar PCBs [3]

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 [3]

2,3,3′,4,4′-Pentachlorobiphenyl (PCB 105)
2,3,4,4',5-Pentachlorobiphenyl (PCB 114)
2,3′,4,4′,5-Pentachlorobiphenyl (PCB 118)
2',3,4,4',5-Pentachlorobiphenyl (PCB 123)
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 [3]

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) [11]

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, 12]

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

Quaternary Ammonium Compounds (QACs) [1]

Alkyltrimethyl ammonium compounds (ATMACs) [1]

C20-22-Alkyltrimethyl ammonium chlorides
Behentrimonium chloride
Cetrimonium bromide
Cetrimonium chloride

Benzylalkyldimethyl ammonium compounds (BACs) [1]

Alkyl(60%C14, 30%C16, 5%C18, 5%C12) dimethylbenzyl ammonium chloride
C12-14-Alkyl(ethylbenzyl)dimethyl ammonium chlorides
Benzalkonium chloride [13]
Benzyl-C12-18-alkyldimethyl ammonium chlorides
Cetalkonium chloride

Dialkyldimethyl ammonium compounds (DADMACs) [1]

Di-C14-18-alkyldimethyl ammonium chlorides
Didecyldimethyl ammonium carbonate
Didecyldimethyl ammonium chloride
Dioctyldimethyl ammonium chloride
Quaternium 18
Quaternium 24
Quaternium 34

Esterquats [1]

Esterquat 1

Polyquaternium compounds (Polyquats) [1]

Polyquaternium 42

QA Herbicides [1]

Diquat dibromide
Paraquat dichloride

Other QACs [1]

Benzethonium chloride
Cetylpyridinium chloride

(Oxydi-2,1-ethanediyl)bis(coco alkyl)dimethyl ammonium dichlorides
Quaternium 15

Tobacco Smoke

Nicotine
  Cotinine
    Cotinine *N*-oxide
    4-Hydroxy-4-(3-pyridyl)-butanoic acid
    trans-3′-Hydroxycotinine (Hydroxycotinine)
    Norcotinine
~~NNK (4-[Methylnitrosamino]-1-[3-pyridyl]-1-butanone)~~ [6]
  ~~NNAL (4-[Methylnitrosamino)-1-(3-pyridyl)-1-butanol)~~ [6]

Notes

[1] All members of the chemical group are priority chemicals, including, but not limited to, the chemicals listed.

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

[3] All members of the chemical group are not priority chemicals; only the specific chemicals listed are priority chemicals.

[4] 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.

[5] 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.

[6] These chemicals have been removed from the priority list, because they were mistakenly added in a previous version of the list. They are designated chemicals only.

[7] Includes *n*-butylparaben and isobutylparaben.

[8] The SGP recommended that the Program develop methods for antimony and beryllium that meet the Program's quality assurance/quality control (QA/QC) standards.

[9] For the description of PFASs and example members of this class, refer to Buck et al. (2011) (Integr Environ Assess Manag 7[4]:513–541; link to free article: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3214619/).

[10] Fungicides, herbicides, and insecticides are grouped under the general heading of "Pesticides."

[11] Hydroxy-PCBs are measured as biomarkers of exposure to the listed PCBs.

[12] The SGP recommended that the three hydroxy-PAHs shown be listed as priority chemicals. These three hydroxy-PAHs are metabolites of benzo[a]pyrene, chrysene and phenanthrene, respectively.

[13] Benzalkonium chloride can also be referred to as alkyldimethylbenzyl ammonium chloride (ADBAC).