Anexa 2. Măsurarea bioactivității

2.1 Elemente de clasificare şi standardizare

Tabelul 1. Clasificarea temporală activității biologice (ADMET)

Proces	Implică studierea şi caracterizarea sub aspectul
Adsorbție	Modalităților şi ratelor de asimilare (în cazul plantelor principalele căi fiind prin intermediul rădăcinilor şi frunzelor).
Distribuție	Proporțiilor concentrației compusului adsorbit între diferite sisteme funcționale ale organismului.
Metabolism	Modificărilor metabolice care apar în organism ca urmare a adsorbției şi distribuției acestuia în diferite sisteme funcționale.
Eliminare	Duratelor de persistență în organism până la eliminarea totală sau parțială (ex. 50%)
Toxicitate	Concentrația sau cantitatea maximă care poate fi administrată fără ca organismul să sufere decesul, sau cantitatea minimă care provoacă decesul unei proporții definite a organismelor incluse în studiu (ex. 50%).

Tabelul 2. Modalități de exprimare pentru EC50 şi IC50

Denumire	Semnificație
EC50 absolută	Concentrația molară a unei substanțe care creşte activitatea măsurată la 50% din intervalul de activitate între minim şi maxim față de control
EC50	Concentrația molară a unei substanțe care produce 50% din răspunsul posibil maxim față de control
EC50 relativă	Concentrația molară a unei substanțe care se află la punctul de inflexiune în funcția de răspuns
IC50 absolută	Concentrația molară a unei substanțe necesară să blocheze un răspuns dat cu 50% din intervalul de activitate între minim şi maxim față de control
IC50 relativă	Concentrația molară a unei substanțe care se află la punctul de inflexiune în funcția de răspuns

Tabelul 3. Definiții asimilate activităților biologice în mediul acvatic

Termen	Semnificație
Toxicitate acvatică acută	Proprietatea intrinsecă a unei substanțe de a fi dăunătoare unui organism în urma unei expuneri pe termen scurt
Persistență	Durata până la care substanța se solubilizează sau descompune
Persistență biologică	Durata până la care substanța este reținută într-un organism
Bioacumulare	Raportul net între cantitatea asimilată şi eliminată de organism
Bioconcentrație	Raportul net între cantitatea asimilată şi eliminată de organism atunci când expunerea se regăseşte în mediul acvatic al organismului
Toxicitate acvatică cronică	Proprietatea unei substanțe de a cauza efecte adverse la un organism acvatic în timpul expunerii care e determinată în relație cu ciclul de viață al organismului

Tabelul 4. Modalități standardizate de determinare a toxicității acvatice acute (UNE-CE-4, 2009)

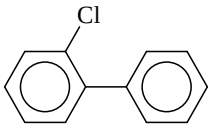
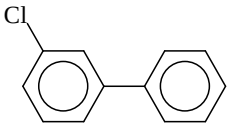
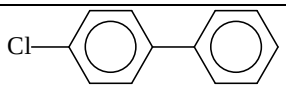
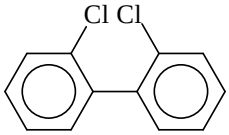
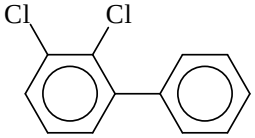
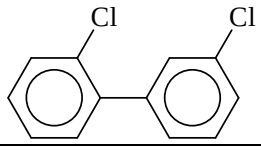
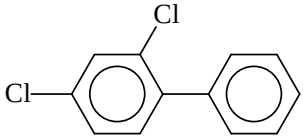
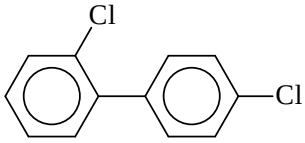
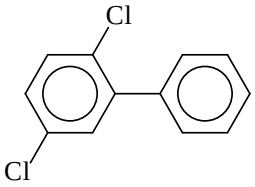
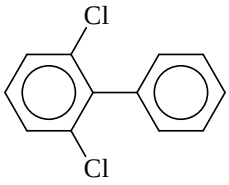
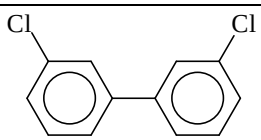
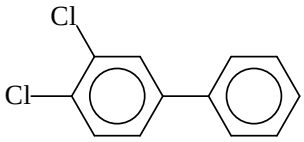
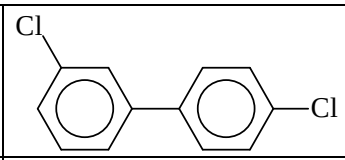
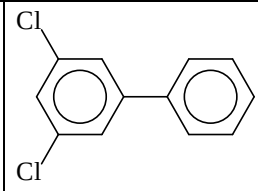
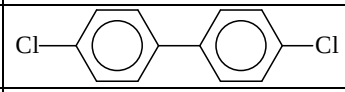
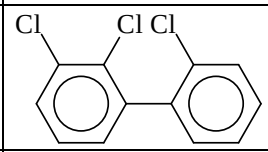
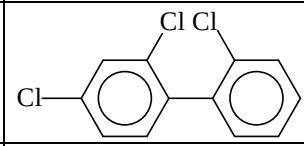
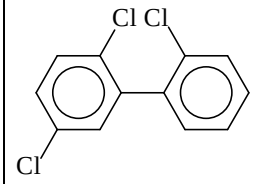
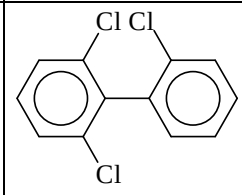
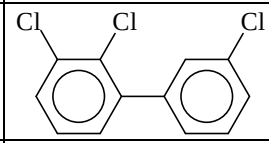
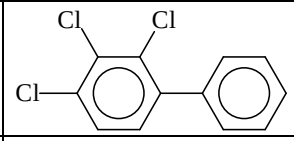
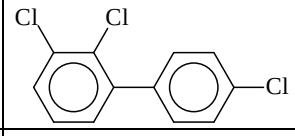
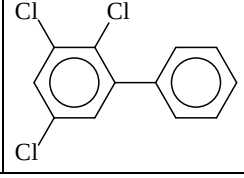
Organism	Modalitate	Standard
peşte	96 ore LC50	OECD Test Guideline 203 sau echivalent
crustacee	48 ore EC50	OECD Test Guideline 202 sau echivalent
alge	72 sau 96 ore EC50	OECD Test Guideline 201 sau echivalent

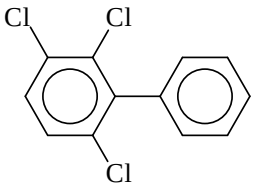
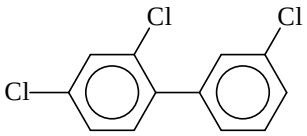
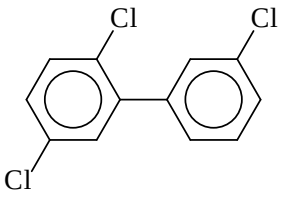
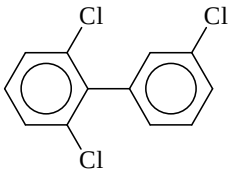
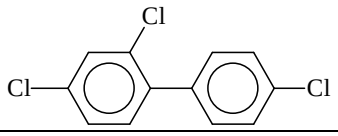
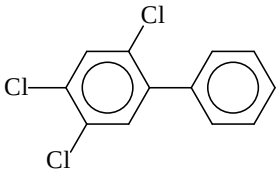
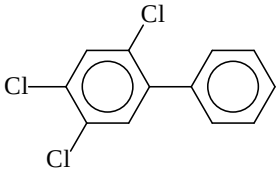
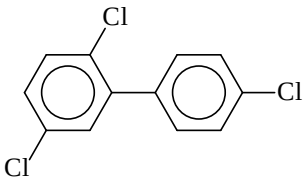
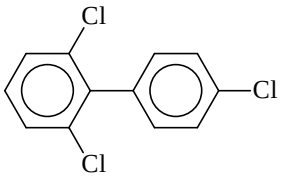
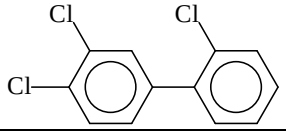
(UNE-CE-4, 2009): United Nations Economic Commission for Europe, Globally Harmonized System of Classification and Labelling of Chemicals (GHS), ed. III-a, 2009, partea a 4-a, p. 216.

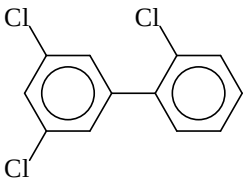
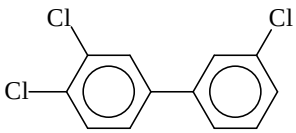
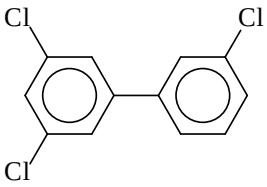
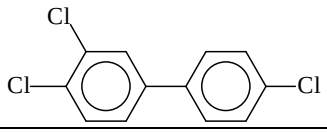
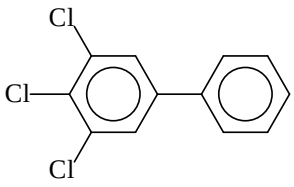
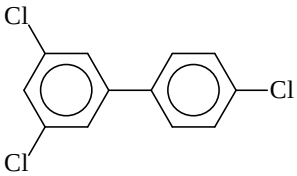
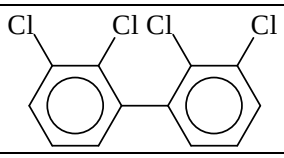
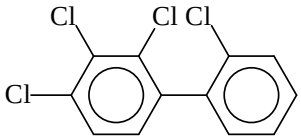
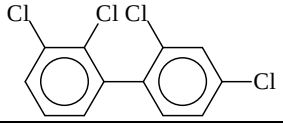
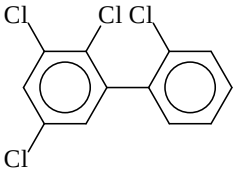
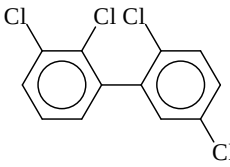
Tabelul 5. Principalele clase de regulatori de creştere şi rolul acestora (ASHS.ORG)

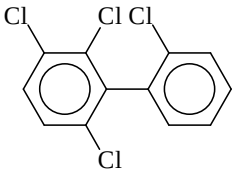
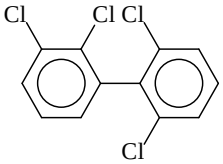
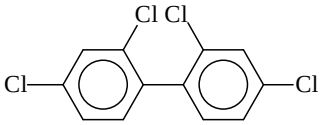
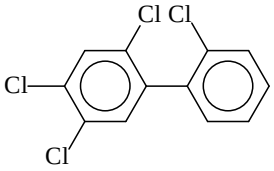
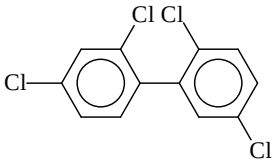
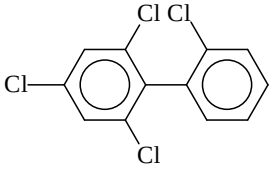
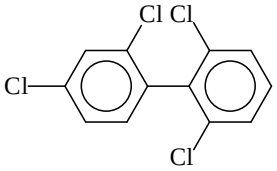
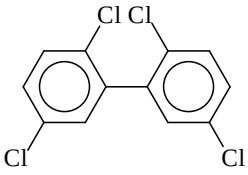
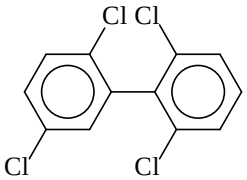
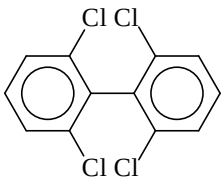
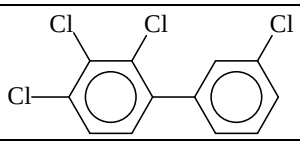
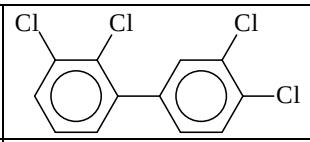
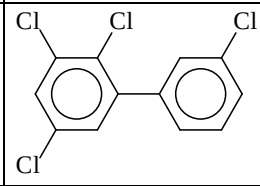
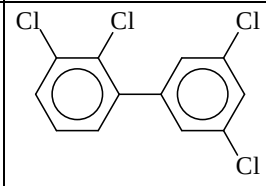
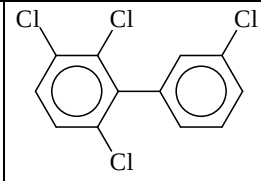
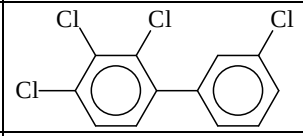
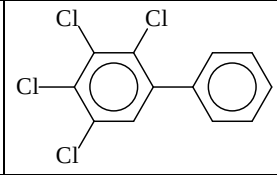
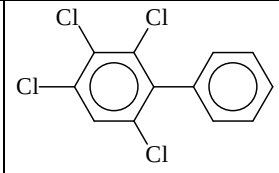
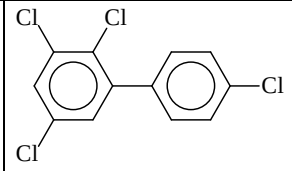
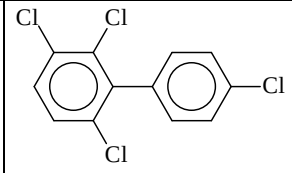
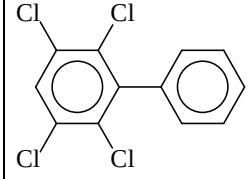
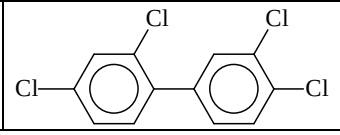
Clasă	Funcție	Utilizare
Auxine	Inițiază extinderea	Pomi cu fructe mici; stimulează rădăcinarea şi înflorirea
Gibbereline	Stimulează diviziunea celulară şi extinderea	Creşte mărimea tulpinii, florilor şi fructelor
Citochine	Stimulează diviziunea celulară	Prelungeşte viața de păstrare a florilor şi părților vegetative, inițiază îmbobocirea, stimulează rădăcinarea
Generatori etilenici	Maturare	Induce maturare uniformă în fructe şi părțile vegetative
Inhibitori de creştere	Stopează creşterea	Favorizează producția florilor prin scurtarea secțiunii dintre noduri
Retardanți de creştere	Încetineşte creşterea	Întârzie creşterea ventuzelor tutunului

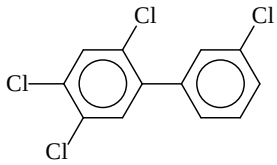
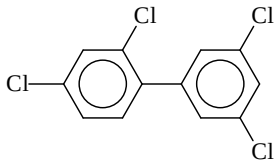
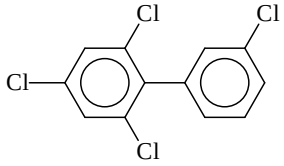
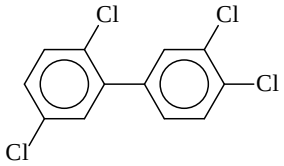
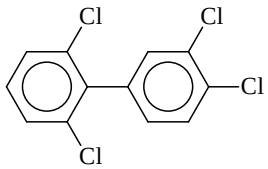
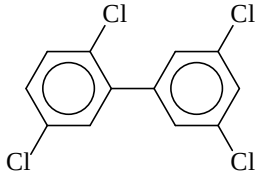
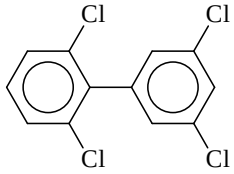
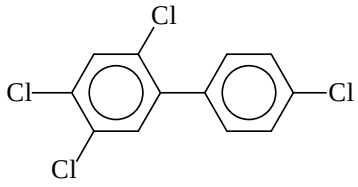
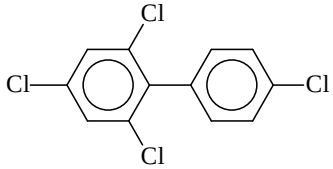
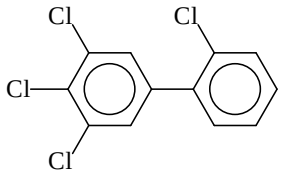
2.2 Structura şi activitatea (partiția octanol/apă) pentru PCBs
Refs: (Eisler & Belisle, 1996); (Mullins & alții, 1984); (Jäntschi & alții, 2007-Chromatogr)

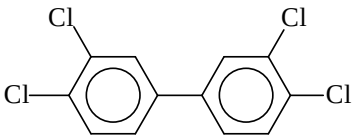
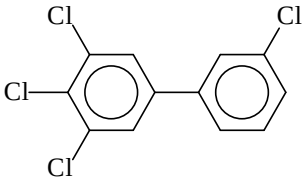
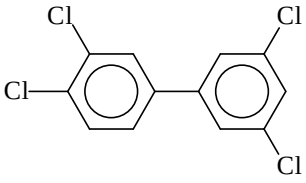
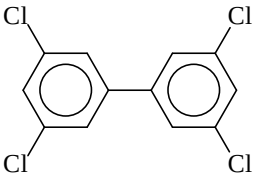
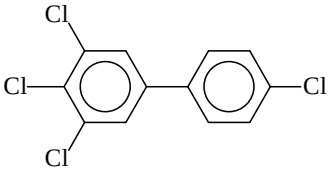
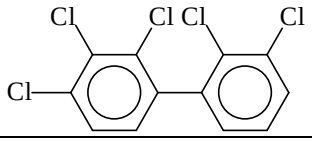
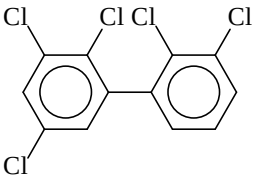
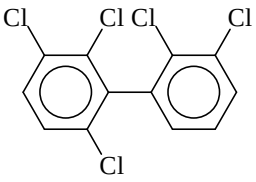
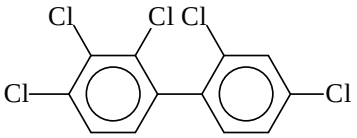
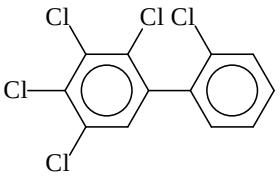
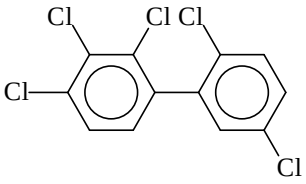
Moleculă	Structură	lkow
PCB001		4.601
PCB002		4.421
PCB003		4.401
PCB004		5.023
PCB005		-
PCB006		5.021
PCB007		5.15
PCB008		5.301
PCB009		5.18
PCB010		5.311
PCB011		5.343
PCB012		5.295
PCB013		-
PCB014		5.404
PCB015		5.335
PCB016		5.311
PCB017		5.761
PCB018		5.551
PCB019		5.481
PCB020		5.577
PCB021		5.517
PCB022		5.421
PCB023		5.577

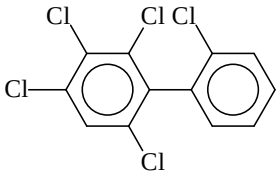
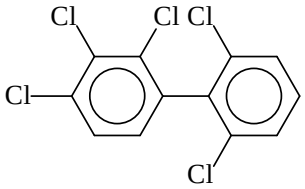
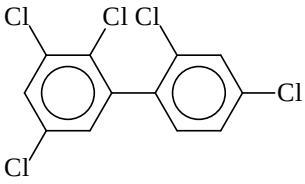
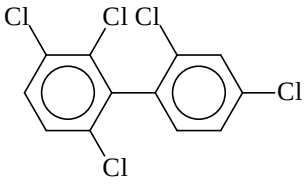
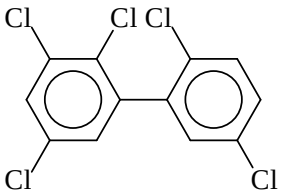
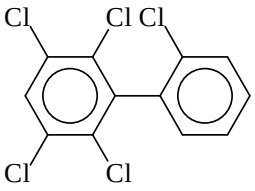
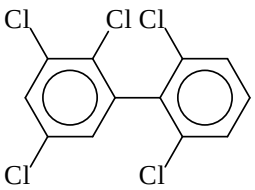
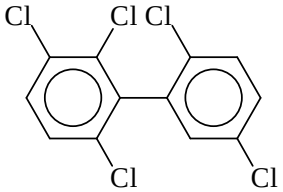
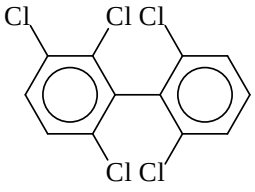
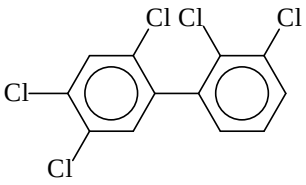
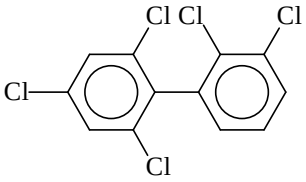
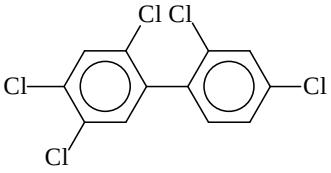
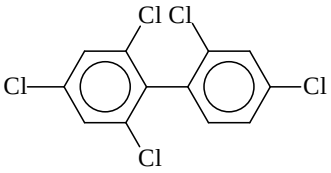
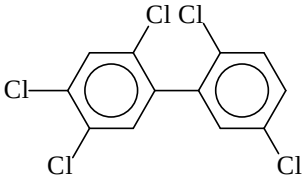
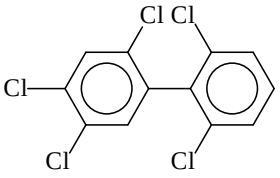
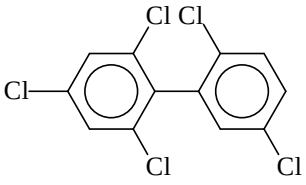
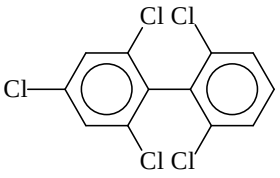
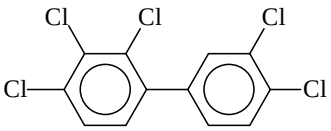
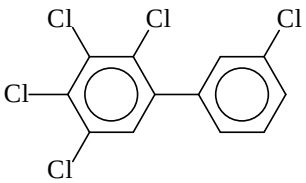
PCB024		5.671
PCB025		5.677
PCB026		5.667
PCB027		5.447
PCB028		5.691
PCB029		5.743
PCB030		5.504
PCB031		5.677
PCB032		5.751
PCB033		5.572

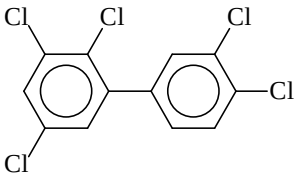
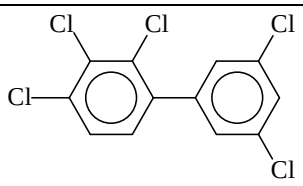
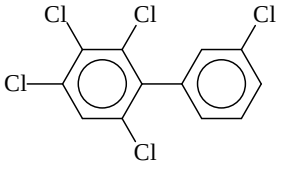
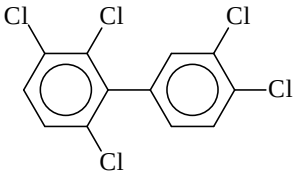
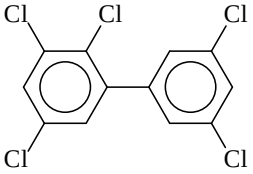
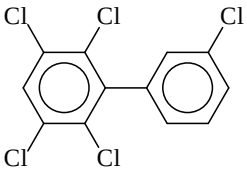
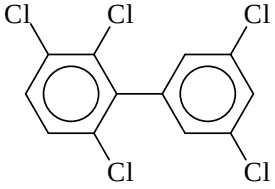
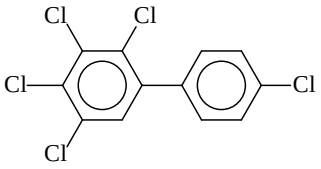
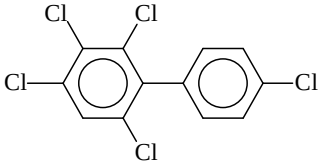
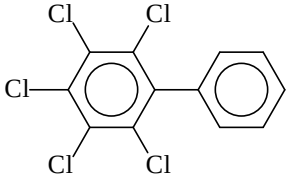
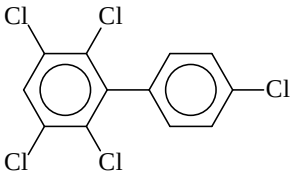
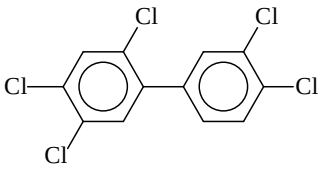
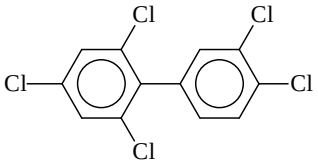
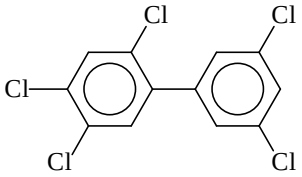
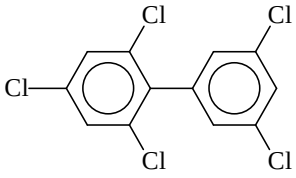
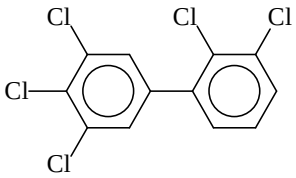
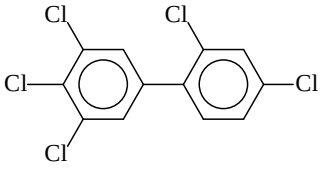
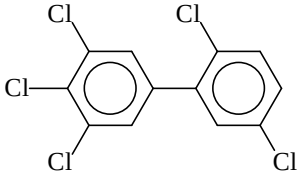
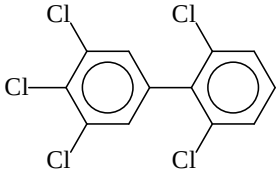
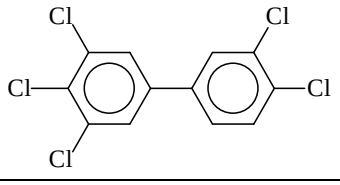
PCB034		5.667
PCB035		5.827
PCB036		4.151
PCB037		4.941
PCB038		5.767
PCB039		5.897
PCB040		5.561
PCB041		6.111
PCB042		5.767
PCB043		5.757
PCB044		5.811

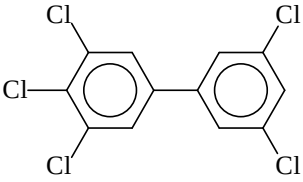
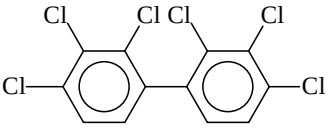
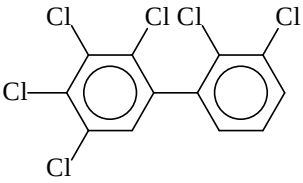
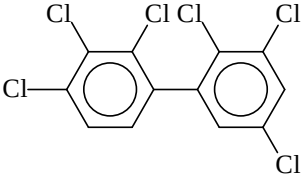
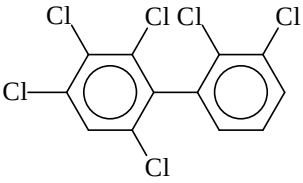
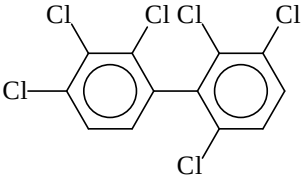
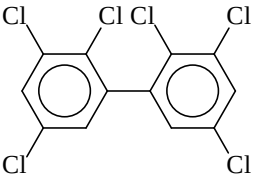
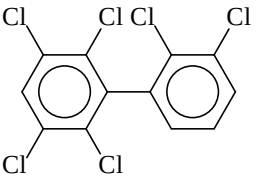
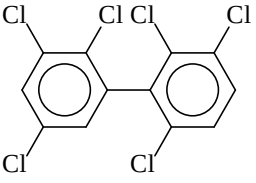
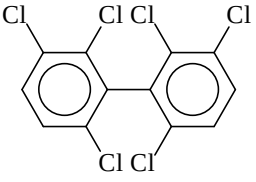
PCB045		5.537
PCB046		5.537
PCB047		6.291
PCB048		5.787
PCB049		6.221
PCB050		5.637
PCB051		5.637
PCB052		6.091
PCB053		5.627
PCB054		5.904
PCB055		6.117
PCB056		6.117
PCB057		6.177
PCB058		6.177
PCB059		5.957
PCB060		5.452
PCB061		5.943
PCB062		5.897
PCB063		6.177
PCB064		5.957
PCB065		5.867
PCB066		5.452

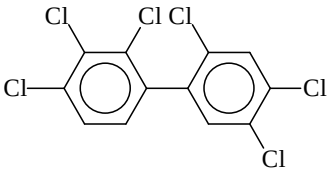
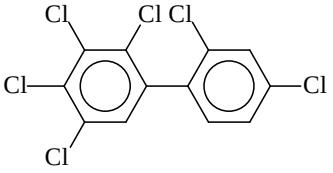
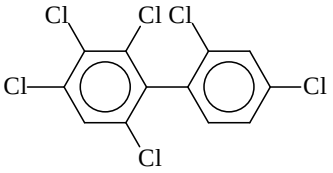
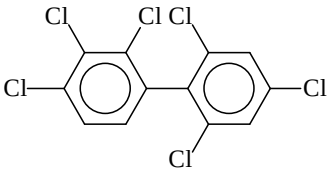
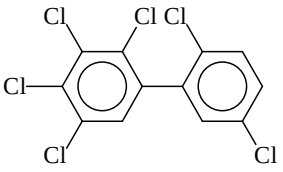
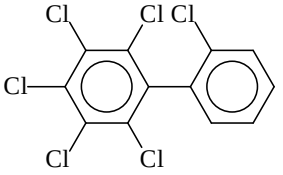
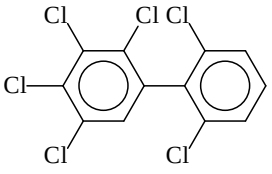
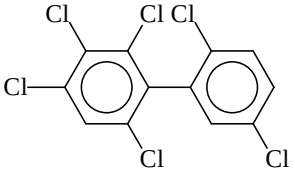
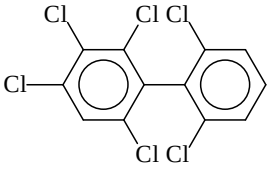
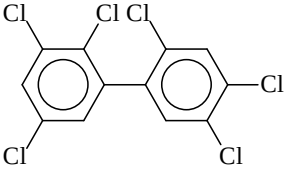
PCB067		6.207
PCB068		6.267
PCB069		6.047
PCB070		6.231
PCB071		5.987
PCB072		6.267
PCB073		6.047
PCB074		6.671
PCB075		6.057
PCB076		6.137

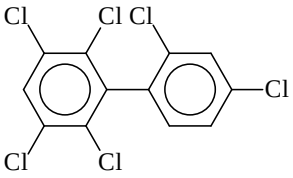
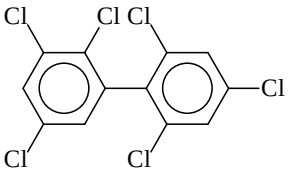
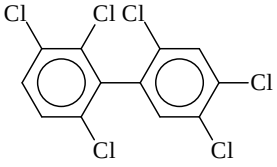
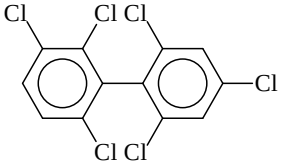
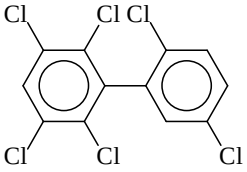
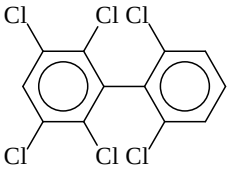
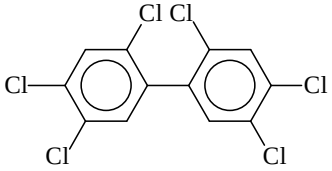
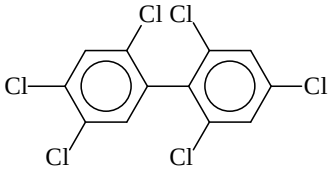
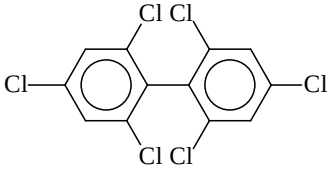
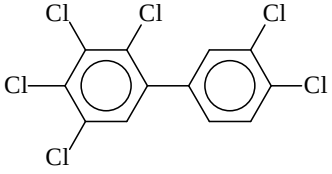
PCB077		6.523
PCB078		6.357
PCB079		6.427
PCB080		6.583
PCB081		6.367
PCB082		6.142
PCB083		6.267
PCB084		6.041
PCB085		6.611
PCB086		6.204
PCB087		6.371

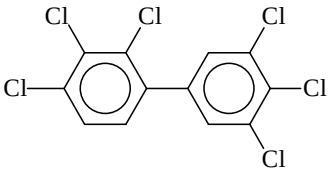
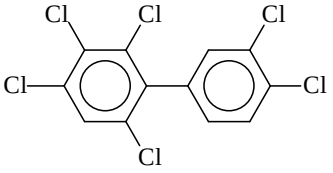
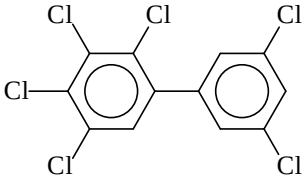
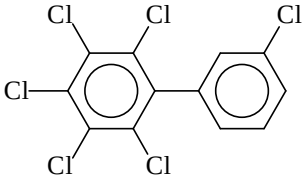
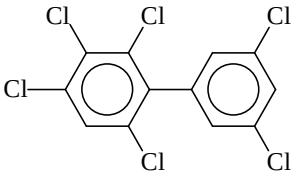
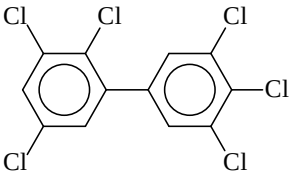
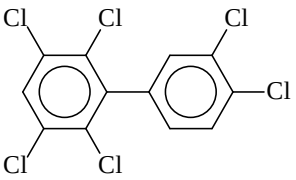
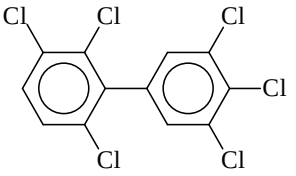
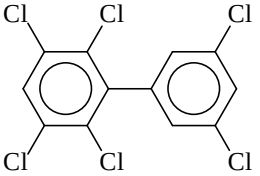
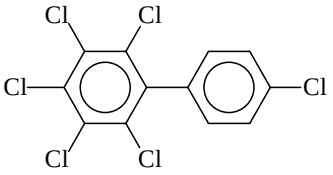
PCB088		7.516
PCB089		6.077
PCB090		6.367
PCB091		6.137
PCB092		6.357
PCB093		6.047
PCB094		6.137
PCB095		6.137
PCB096		5.717
PCB097		6.671
PCB098		6.137
PCB099		7.211
PCB100		6.237
PCB101		7.071
PCB102		6.167
PCB103		6.227
PCB104		5.817
PCB105		6.657
PCB106		6.647

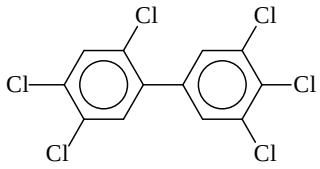
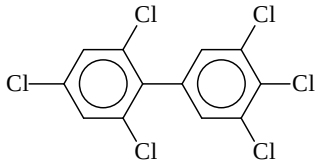
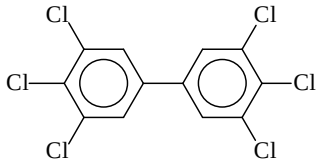
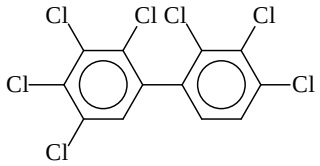
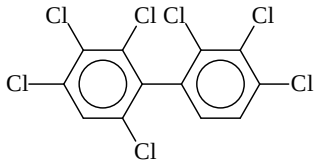
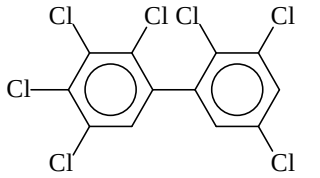
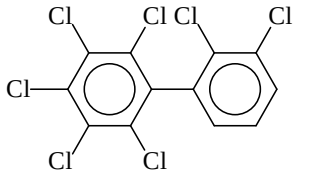
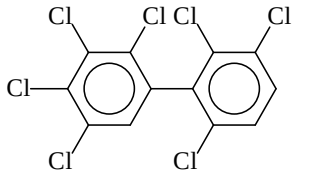
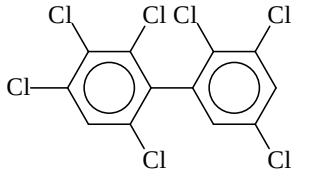
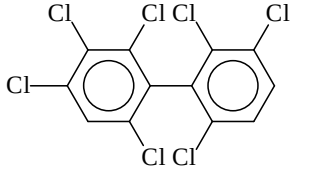
PCB107		6.717
PCB108		6.717
PCB109		6.487
PCB110		6.532
PCB111		6.767
PCB112		6.457
PCB113		6.547
PCB114		6.657
PCB115		6.497
PCB116		6.304
PCB117		6.467
PCB118		7.121
PCB119		6.587
PCB120		6.797
PCB121		6.647
PCB122		6.647
PCB123		6.747
PCB124		6.737
PCB125		6.517
PCB126		6.897

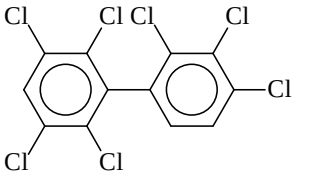
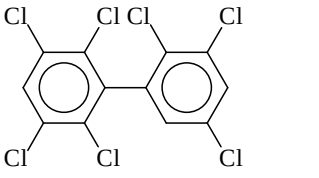
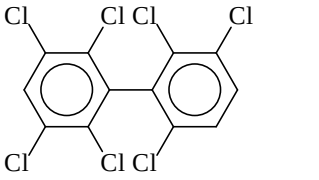
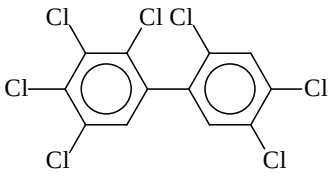
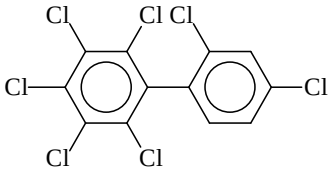
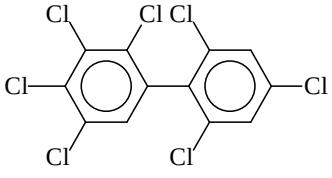
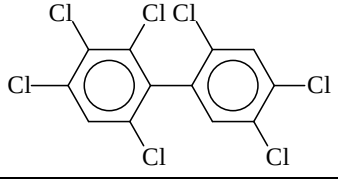
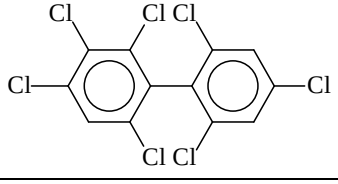
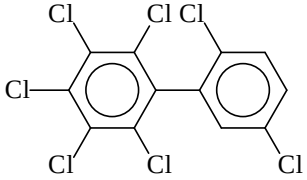
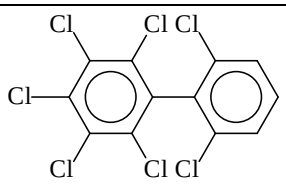
PCB127		6.957
PCB128		6.961
PCB129		7.321
PCB130		7.391
PCB131		6.587
PCB132		6.587
PCB133		6.867
PCB134		7.304
PCB135		7.151
PCB136		6.511

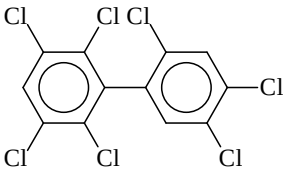
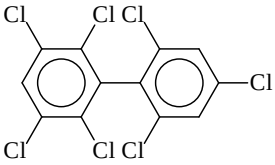
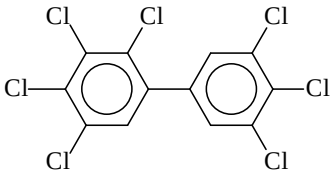
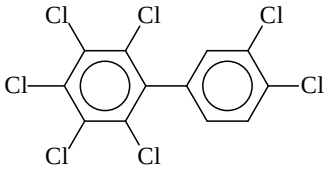
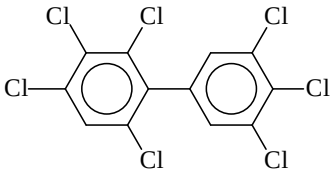
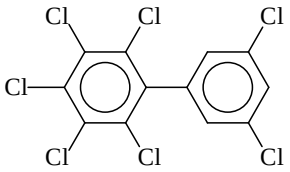
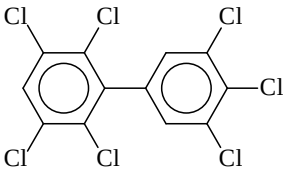
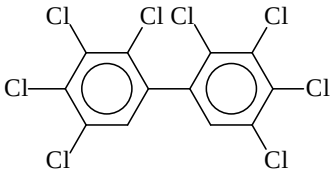
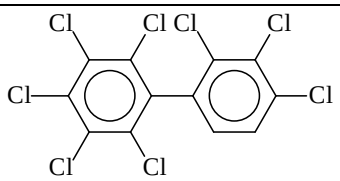
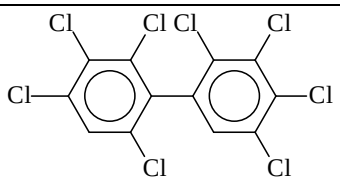
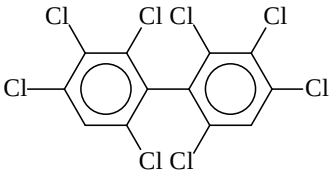
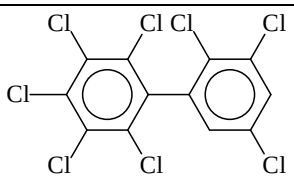
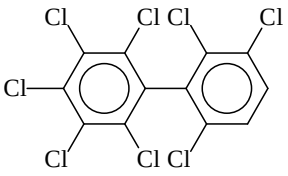
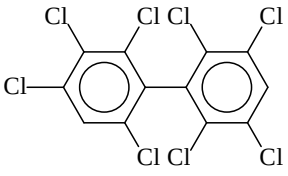
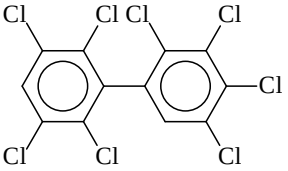
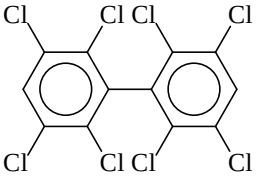
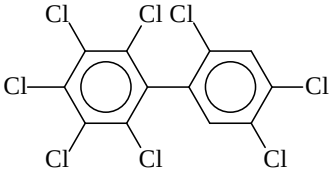
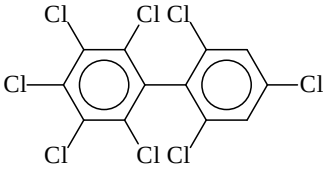
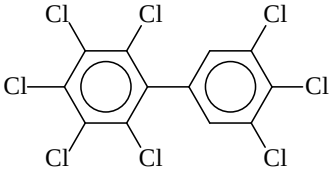
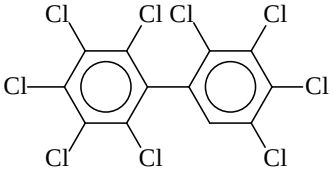
PCB137		-
PCB138		7.441
PCB139		6.677
PCB140		6.677
PCB141		7.592
PCB142		6.517
PCB143		6.607
PCB144		6.677
PCB145		6.257
PCB146		6.897

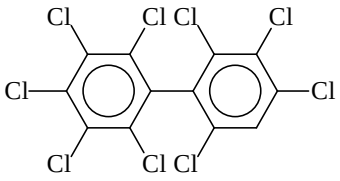
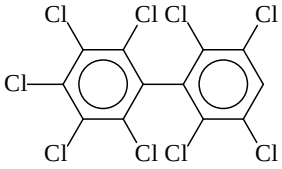
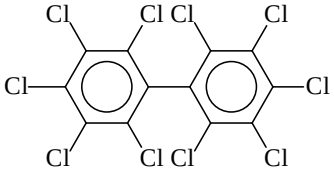
PCB147		6.647
PCB148		6.737
PCB149		7.281
PCB150		6.327
PCB151		6.647
PCB152		6.227
PCB153		7.751
PCB154		6.767
PCB155		7.123
PCB156		7.187

PCB157		7.187
PCB158		7.027
PCB159		7.247
PCB160		6.937
PCB161		7.087
PCB162		7.247
PCB163		6.997
PCB164		7.027
PCB165		7.057
PCB166		6.937

PCB167		7.277
PCB168		7.117
PCB169		7.427
PCB170		7.277
PCB171		6.704
PCB172		7.337
PCB173		7.027
PCB174		7.117
PCB175		7.177
PCB176		6.767

PCB177		7.087
PCB178		7.147
PCB179		6.737
PCB180		7.367
PCB181		7.117
PCB182		7.207
PCB183		7.207
PCB184		6.857
PCB185		7.933
PCB186		6.697

PCB187		7.177
PCB188		6.827
PCB189		7.717
PCB190		7.467
PCB191		7.557
PCB192		7.527
PCB193		7.527
PCB194		8.683
PCB195		7.567
PCB196		7.657
PCB197		7.307
PCB198		7.627
PCB199		7.207
PCB200		7.277
PCB201		7.627
PCB202		8.423
PCB203		7.657
PCB204		7.307
PCB205		8.007
PCB206		9.143

PCB207		7.747
PCB208		8.164
PCB209		9.603