

# Overview of Updated Designated & Priority Chemical Lists

Sara Hoover, Chief  
Safer Alternatives Assessment and Biomonitoring Section  
Office of Environmental Health Hazard Assessment

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# Goals of this agenda item

- ▶ Announce additions to the designated list
  - ▶ Introduce proposed new format for designated and priority lists
  - ▶ Obtain input from SGP and public on proposed format
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# Automatic additions to designated chemicals list

Chemicals included in CDC studies under the National Report on Human Exposure to Environmental Chemicals program:

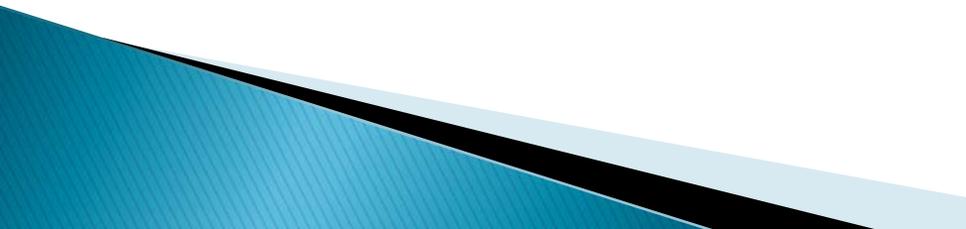
- ▶ Carbaryl

- Metabolite is 1-hydroxynaphthalene (1-naphthol)
- Naphthalene and carbaryl referenced as parent chemicals

- ▶ Parabens

- New CDC publication

([http://www.cdc.gov/exposurereport/biomonitoring\\_articles.html](http://www.cdc.gov/exposurereport/biomonitoring_articles.html))



# Proposed new format for lists

- ▶ Generally adopts format used in CDC 4<sup>th</sup> report with some variation:
  - ▶ SGP additions to lists
  - ▶ Retain certain categories for clarity
- ▶ Both the designated and priority lists are formatted the same way
- ▶ Parent chemicals and metabolites (or other indicator chemicals) are included on both lists

# Sample of proposed format: designated list

## Acrylamide

Acrylamide hemoglobin adducts  
Glycidamide hemoglobin adducts

## Antimicrobials used in Food Production<sup>2</sup>

## Brominated and Chlorinated Organic Compounds used as Flame Retardants<sup>2</sup>

2,2-Bis(bromomethyl)-1,3-propanediol  
2,2-Bis(chloromethyl)trimethylene bis[bis(2-chloroethyl)phosphate]  
Bis(2-ethyl-1-hexyl) tetrabromophthalate  
Bis(hexachlorocyclopentadieno)cyclooctane  
(Dechlorane Plus)  
1,2-Bis(2,4,6-tribromophenoxy)ethane  
1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane  
2,3-Dibromopropyl-2,4,6-tribromophenyl ether  
2-Ethyl-1-hexyl-2,3,4,5-tetrabromobenzoate  
Chlorendic acid  
Decabromodiphenylethane  
Hexabromobenzene  
2,2',4,4',5,5'-Hexabromobiphenyl (BB 153)  
Hexabromocyclododecane (HBCD)  
Hexachlorocyclopentadienyl-dibromocyclooctane  
N,N-Ethylene-bis(tetrabromophthalimide)  
Pentabromoethylbenzene  
Pentabromotoluene  
Short-chain chlorinated paraffins  
Tetrabromobisphenol A (TBBPA)  
Tetrabromobisphenol A bis(2,3-dibromopropyl ether)

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  
(BDE183)  
2,2',3,3',4,4',5,5',6,6'-Decabromodiphenyl ether  
(BDE 209)

## Cyclosiloxanes<sup>2</sup>

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

## Diesel Exhaust<sup>3</sup>

## Disinfection By-Products (Trihalomethanes)<sup>4</sup>

Bromodichloromethane  
Dibromochloromethane  
Tribromomethane (Bromoform)  
Trichloromethane (Chloroform)

## Environmental Phenols<sup>4</sup>

Benzophenone-3 (2-Hydroxy-4-methoxybenzophenone)  
Bisphenol A (2,2-bis[4-Hydroxyphenyl] propane)  
Butylparaben (Butyl 4-hydroxybenzoate)

# Sample of proposed format: priority list

dimethylcyclopropane carboxylic acid  
Cypermethrin  
3-Phenoxybenzoic acid  
*cis*-Cypermethrin  
*cis*-3-(2,2-Dichlorovinyl)-2,2-  
dimethylcyclopropane carboxylic acid  
*trans*-Cypermethrin  
*trans*-3-(2,2-Dichlorovinyl)-2,2-  
dimethylcyclopropane carboxylic acid  
Deltamethrin  
3-Phenoxybenzoic acid  
*cis*-3-(2,2-Dibromovinyl)-2,2-  
dimethylcyclopropane carboxylic acid  
Permethrin  
3-Phenoxybenzoic acid  
*cis*-Permethrin  
*cis*-3-(2,2-Dichlorovinyl)-2,2-  
dimethylcyclopropane carboxylic acid  
*trans*-Permethrin  
*trans*-3-(2,2-Dichlorovinyl)-2,2-  
dimethylcyclopropane carboxylic acid  
Pyrethrin 1  
*cis/trans*-Dimethylvinylcyclopropane  
carboxylic diacid  
Resmethrin  
*cis/trans*-Dimethylvinylcyclopropane carboxylic  
diacid

## Phthalates<sup>4</sup>

Benzylbutyl phthalate (BzBP)  
Mono-benzyl phthalate

## Polycyclic Aromatic Hydrocarbons<sup>4</sup>

Benzo[a]pyrene  
3-Hydroxybenzo[a]pyrene  
Chrysene  
1-Hydroxychrysene  
2-Hydroxychrysene  
3-Hydroxychrysene  
4-Hydroxychrysene  
6-Hydroxychrysene  
Phenanthrene  
1-Hydroxyphenanthrene  
2-Hydroxyphenanthrene  
3-Hydroxyphenanthrene  
4-Hydroxyphenanthrene  
9-Hydroxyphenanthrene

## Tobacco Smoke

Nicotine  
Cotinine

## Volatile Organic Compounds<sup>4</sup>

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

# Changes under proposed format

- ▶ Chemicals presented in one column
  - Metabolites, other biomarkers, and relevant indicator chemicals (e.g., environmental degradation products) shown indented under parent
- ▶ Organization generally follows CDC 4<sup>th</sup> report
  - New categories included, e.g., “Disinfection byproducts (trihalomethanes)”
  - Chemicals moved into categories consistent with CDC (e.g., *p*-dichlorobenzene listed under “Volatile organic compounds” instead of “Other pesticides”)

# Exceptions to CDC organization

- ▶ SGP listings
  - Retained “Brominated and chlorinated organic compounds used as flame retardants” with PBDEs included in that category
  - Retained categories not included by CDC (e.g., “Antimicrobials used in food production”)
- ▶ Other exceptions for clarity
  - Tobacco smoke retained as heading
  - DEET retained in “Other pesticides” category instead of listed singly
  - Common names retained (e.g., carbon tetrachloride instead of tetrachloromethane)

# Challenges/questions

- ▶ Metabolite named as the priority chemical
  - If the parent is known, should it be included?
    - E.g., “3-Hydroxybenzo[a]pyrene” could be listed under “Benzo[a]pyrene”
- ▶ Metabolite is the chemical of concern to highlight
  - E.g., Would “3,4-dichloroaniline” be listed under “Chemicals metabolized to 3,4-dichloroaniline”? Or would this be shown aligned left and footnoted as an exception? (hypothetical example)
- ▶ Non-specific metabolites
  - In some cases, CDC includes non-specific metabolites not linked to a specific parent
  - How should these be shown? In the proposed format, non-specific metabolites are aligned left.

# Challenges/questions (cont.)

- ▶ How should isomers be listed?
  - Example from proposed format:  
“Hexachlorocyclohexanes (HCH) (including beta-HCH and gamma-HCH [lindane])”
- ▶ What about various metal species?
  - E.g., Arsenic – indent arsenic species in new format, consistent with CDC

# Follow up

- ▶ Panel and public input incorporated
- ▶ Substantive changes requiring further discussion will be addressed at May 24 SGP meeting