



Summary of toxic air contaminants with and without developmental or reproductive effects

This document is to communicate to the CAO Rules Advisory Committee which toxic air contaminants are expected to cause developmental or reproductive effects and which are not. This list of contaminants is supported by the majority of the Hazard Index Technical Advisory Committee. Under option 2 in proposed rules these two lists of chemicals could be differently regulated. Those with developmental or reproductive effects (141) would be regulated at a noncancer TBACT Risk Action Level (RAL) of a Hazard Index of 3 and the remaining 43 toxic air contaminants would continue to be assigned a noncancer TBACT Risk Action Level of a Hazard Index of 5 for existing facilities. The 141 Toxic Air Contaminants listed here as developmental or reproductive toxic air contaminants meet the proposed criteria supported by the majority of the Hazard Index Technical Advisory Committee to be classified as having developmental or reproductive effects.

Background numbers and information related to toxic air contaminants and Hazard Index Rulemaking

- Toxic air contaminants or classes of toxic air contaminants regulated under CAO: **261**
- Toxic air contaminants with non-cancer toxicity reference values: **184**
- Toxic air contaminants out of 184 that meet HI Technical Advisory Committee criteria for having developmental or reproductive health effects: **141**
- Toxic air contaminants out of 184 that do not meet HI Technical Advisory Committee criteria for having developmental or reproductive health effects: **43** (listed below)

Developmental or Reproductive Toxic Air Contaminants (141)

Acetaldehyde

Acetone

Acetonitrile

Acrolein

Acrylamide

Acrylic acid

Acrylonitrile

Allyl chloride

Antimony trioxide

Arsenic and compounds

Arsine

Benzene

Bromomethane (Methyl bromide)

1-Bromopropane (n-propyl bromide)

1,3-Butadiene

2-Butanone (Methyl ethyl ketone)

sec-Butyl alcohol

Cadmium and compounds

Caprolactam

Carbon disulfide

Carbon tetrachloride

Carbonyl sulfide

Chlordane

Chlorine

Chlorine dioxide

Chlorobenzene

1-Chloro-1,1-difluoroethane

Chlorodifluoromethane (Freon 22)

Chloroethane (Ethyl chloride)

Chloroform

Chloromethane (Methyl chloride)

Chromium VI, chromate and

dichromate particulate

Chromium VI, chromic acid aerosol mist

Cobalt and compounds

Copper and compounds

Cresols (mixture), including m-

cresol, o-cresol, p-cresol

Cyanide, Hydrogen

Cyclohexane

Diazinon

1,2-Dibromo-3-chloropropane (DBCP)

p-Dichlorobenzene (1,4-Dichlorobenzene)

trans-1,2-dichloroethene

Dichloromethane (Methylene chloride)

1,2-Dichloropropane (Propylene dichloride)

Dimethyl formamide

1,1-Dimethylhydrazine

1,4-Dioxane

Disulfoton

Epichlorohydrin

Ethyl acrylate

Ethyl benzene

Ethylene dibromide (EDB, 1,2-Dibromoethane)

Ethylene dichloride (EDC, 1,2-Dichloroethane)

Ethylene glycol
Ethylene glycol monobutyl ether
Ethylene glycol monoethyl ether
Ethylene glycol monoethyl ether acetate
Ethylene glycol monomethyl ether
Ethylene glycol monomethyl ether acetate
 Ethylene oxide
Fluorides
Fluorine gas
 Formaldehyde
Glutaraldehyde
Hexachlorocyclopentadiene
Hexachloroethane
Hexane
 Hydrazine
Hydrochloric acid
Hydrogen fluoride
Hydrogen sulfide
Isophorone
Isopropyl alcohol
Lead and compounds
Manganese and compounds
Mercury and compounds
Methanol
Methylene diphenyl diisocyanate (MDI)
Methyl isobutyl ketone (MIBK, Hexone)
Methyl isocyanate
 Methyl tert-butyl ether
Nickel compounds, soluble
Parathion
Phenol
Phosphorus, white
Phthalic anhydride
Polybrominated diphenyl ethers (PBDEs)
 Polychlorinated biphenyls (PCBs)
 TEQ
 PCB 77 [3,3',4,4'-tetrachlorobiphenyl]
 PCB 81 [3,4,4',5-tetrachlorobiphenyl]
 PCB 105 [2,3,3',4,4'-pentachlorobiphenyl]

PCB 114 [2,3,4,4',5-pentachlorobiphenyl]
 PCB 118 [2,3',4,4',5-pentachlorobiphenyl]
 PCB 123 [2,3',4,4',5'-pentachlorobiphenyl]
 PCB 126 [3,3',4,4',5-pentachlorobiphenyl]
 PCB 156 [2,3,3',4,4',5-hexachlorobiphenyl]
 PCB 157 [2,3,3',4,4',5'-hexachlorobiphenyl]
 PCB 167 [2,3',4,4',5,5'-hexachlorobiphenyl]
 PCB 169 [3,3',4,4',5,5'-hexachlorobiphenyl]
 PCB 189 [2,3,3',4,4',5,5'-heptachlorobiphenyl]
 Polychlorinated dibenzo-p-dioxins (PCDDs) & dibenzofurans (PCDFs)
 TEQ
 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)
 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)
 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)
 Octachlorodibenzo-p-dioxin (OCDD)
 2,3,7,8-Tetrachlorodibenzofuran (TcDF)
 1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
 2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
 1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
 1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
 1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)

2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)
 1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
 1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
 Octachlorodibenzofuran (OCDF)
Benzo[a]pyrene
Propylene glycol monomethyl ether
 Propylene oxide
Selenide, hydrogen
Styrene
Sulfur Mustard
Tetrachloroethene (Perchloroethylene)
1,1,1,2-Tetrafluoroethane
Titanium tetrachloride
Toluene
Toluene diisocyanates (2,4- and 2,6-)
1,1,1-Trichloroethane (Methyl chloroform)
Trichloroethene (TCE, Trichloroethylene)
Triethylamine
1,2,3-Trimethylbenzene
1,2,4-Trimethylbenzene
1,3,5-Trimethylbenzene
Vanadium (fume or dust)
 Vanadium pentoxide
Vinyl acetate
 Vinyl chloride
Vinylidene chloride
Xylene (mixture), including m-xylene, o-xylene, p-xylene

Bold text indicates toxic air contaminants for which noncancer risk is likely to drive regulation/emissions reduction requirements rather than cancer risk (Count: 84)

Toxic Air Contaminants Not Expected to Have Developmental or Reproductive Health Effects (43)

Benzyl chloride
Beryllium and compounds
Bis(2-chloroethyl) ether (DCEE)
Bis(chloromethyl) ether
Chloroprene
1,3-Dichloropropene
Diesel Particulate Matter
4,4'-Methylenedianiline
Naphthalene
Nitrobenzene
Aluminum and compounds
Ammonia
Aniline
2-Chloroacetophenone
Chloropicrin
Dichlorovos (DDVP)
Diethanolamine
Diethylene glycol monobutyl ether
Diethylene glycol monoethyl ether
1,1-Difluoroethane
1,2-Epoxybutane
Hexamethylene-1,6-diisocyanate
Isopropylbenzene (Cumene)
Maleic anhydride
Methyl methacrylate

Nickel compounds, insoluble
Nitric acid
2-Nitropropane
Oleum
Phosgene
Phosphine
Phosphoric acid
Propionaldehyde
Propylene
Propylene glycol dinitrate
Refractory Ceramic Fibers
Selenium and compounds
Silica, crystalline (respirable)
Sodium hydroxide
Sulfuric acid
Sulfur trioxide
1,2,3-Trichloropropane
Vinyl bromide

Bold text indicates toxic air contaminants for which noncancer risk is likely to drive regulation/emissions reduction requirements rather than cancer risk (Count: 33)