

The Environmental Protection Agency frequently regulates classes of chemicals under the various statutes in its jurisdiction.

- There are more than 30 categories of chemicals regulated under the Clean Air Act.¹
- There are 26 categories of chemicals on the Toxic Pollutant List under the Clean Water Act.²
- There are National Primary Drinking Water Regulations for 9 classes of substances under the Safe Drinking Water Act.³
- There are 33 categories of chemicals that must be reported under the Toxic Release Inventory under the Emergency Planning and Community Right to Know Act, including 4 categories containing 83 specifically-listed chemicals.⁴
- There are more than 40 categories of chemicals that are considered hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act.⁵

¹ For example, the following categories were included in the original hazardous air pollutant list published by congress: antimony compounds, arsenic compounds, beryllium compounds, cadmium compounds, chromium compounds, cobalt compounds, cyanide compounds, glycol ethers, lead compounds, manganese compounds, mercury compounds, fine mineral fibers, nickel compounds, selenium compounds, polycyclic organic matter, radionuclides. 42 USC Section 7412 (b)(1)

² antimony and compounds, arsenic and compounds, beryllium and compounds, cadmium and compounds, chlorinated benzenes (other than di-chlorobenzenes), chlorinated ethanes, chloroalkyl ethers, chlorinated phenols, chromium and compounds, copper and compounds, cyanides, dichlorobenzenes, dichloroethylenes, haloethers, halomethanes, lead and compounds, mercury and compounds, nickel and compounds, nitrophenols, nitrosamines, phthalate esters, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, selenium and compounds, silver and compounds, thallium and compounds, zinc and compounds. 40 CFR Section 401.15

³ alpha/poton emitters, beta photon emitters, chloramines, chromium (total), haloacetic acids, PCBs, total coliforms, total trihalomethanes, xylenes (total). https://www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf

⁴ antimony compounds, arsenic compounds, barium compounds, beryllium compounds, cadmium compounds, chlorophenols, chromium compounds, cobalt compounds, cyanide compounds, copper compounds, diisocyanates, dioxin and dioxin-like compounds, certain glycol esters, hexabromocyclododecane, lead compounds, manganese compounds, mercury compounds, nickel compounds, nicotine and salts, nitrate compounds, Nonylphenol, Nonylphenol ethoxylates (NPEs), Polybrominated Biphenyls (PBBs), PCBs, Polychlorinated alkanes, Polycyclic aromatic compounds (PACs), selenium compounds, silver compounds, strychnine and salts, thallium compounds, vanadium compounds, warfarin and salts, zinc compounds, ethylenebisdithiocarbamic acids/salts/esters (EBDCs). 40 C.F.R. § 372.65.

⁵ antimony compounds, beryllium compounds, cadmium compounds, chromium compounds, chlorinated benzenes, chlorinated ethers, chlorinated phenols, chloroalkyl ethers, cobalt compounds, coke oven emissions, cyanides, cyanide compounds, cyanides (soluble salts and complexes not otherwise specified), copper compounds, creosote, DDT and metabolites, dichlorobenzidine, Diphenylhydrazine, Endosulfan and Metabolites, Endrin and metabolites, Fine Mineral Fibers, Glycol Ethers, Haloethers, Halomethanes, Heptachlor and Metabolites, lead compounds, manganese compounds, mercury compounds, nickel compounds, nicotine and salts, nitrate compounds, Nitrosamines, Nitrophenols (other than chlorinated), Phthalate Esters, Polychlorinated Biphenyls (PCBs), Polycyclic Organic Matter, Polynuclear Aromatic Hydrocarbons (PAHs), Radionuclides, selenium compounds, silver compounds, thallium compounds, zinc compounds. 40 C.F.R. § 302.4

- EPA has specific authority to regulate classes of chemicals under TSCA⁶ and it has done so with regards to new chemicals. For example, there are more than 300 PFAS chemicals regulated under two different significant new use rules.⁷

EPA regulates classes or categories of chemicals for various reasons. For example:

- EPA regulated cresols as a class under CERCLA because of animal studies showing that they have similar carcinogenic effects.⁸
- EPA regulates particulate matter under the Clean Air Act in subclasses of similarly-sized chemicals because they have similar health effects.⁹
- EPA regulates mercury compounds as a class under the Clean Water Act because of their combined effect as a potent neurotoxin and tendency to combine bind with other chemicals.¹⁰
- EPA regulates dioxin and dioxin-like compounds as a class under EPCRA because they are produced in extremely small amounts compared to other chemicals reported on the TRI and they are grouped together to make reporting requirements easier.¹¹
- EPA regulates glycol ethers as a class under the TRI by specifying a molecular formula. The class regulation groups together glycol ethers that have a common structure and pose similar hazards. Based on available human health data on short-chain length glycol ethers, the EPA grouped these chemicals together because they can *reasonably be anticipated* to cause: kidney toxicity, liver toxicity, adverse blood effects, adverse central nervous system effects, reproductive effects, and/or developmental effects.¹²
- EPA regulated a class of polybrominated diphenylethers (PBDEs) in a TSCA significant new use rule (SNUR) because the chemicals posed similar health effects, shared origins, similar sources of exposure, and similar environmental effects.¹³
- When EPA previously regulated a large group of PFAS in a TSCA SNUR, it did so because the chemicals posed similar risks to human health and the environment, had persistent and bioaccumulative tendencies, and likely came from similar sources.¹⁴

Studying chemicals as a class, and extrapolating information about known class members and applying it to similar chemicals is accepted scientific practice:

⁶ 15 U.S.C. 2625(c) (“Any action authorized or required to be taken by the Administrator under any provision of this chapter with respect to a chemical substance or mixture may be taken by the Administrator in accordance with that provision with respect to a category of chemical substances or mixtures. Whenever the Administrator takes action under a provision of this chapter with respect to a category of chemical substances or mixtures, any reference in this chapter to a chemical substance or mixture (insofar as it relates to such action) shall be deemed to be a reference to each chemical substance or mixture in such category”).

⁷ See 40 C.F.R. § 721.9582; 40 C.F.R. § 721.10536.

⁸ 60 Fed Reg 30926.

⁹ 73 Fed Reg 59034.

¹⁰ 82 Fed Reg. 27154.

¹¹ 64 Fed Reg. 58666.

¹² 59 Fed Reg. 34386.

¹³ 77 Fed Reg. 19862.

¹⁴ 77 Fed Reg. 48924.

- EPA and other federal agencies use “QSAR” methodologies to make risk estimates about less-studied chemicals¹⁵
- The National Academies recently published a comprehensive report on studying organohalogen flame retardants as a class¹⁶

¹⁵ <https://www.epa.gov/chemical-research/toxicity-estimation-software-tool-test>

¹⁶ <https://www.nap.edu/catalog/25412/a-class-approach-to-hazard-assessment-of-organohalogen-flame-retardants>