

Major Environmental Pollutants

Pollutant	Location	Source	Environmental Impact	Health Effect	Remediation
Asbestos	Indoor Air	Added as fire retardant in ceiling tiles, floor tiles and mastic, pipe insulation, brake pads, firefighter equipment	Human Health (airborne only)	Lung cancer, asbestosis, mesothelioma	Removal, prevent disturbance, banned by TSCA
CFC's	Troposphere and Stratosphere	Used as solvent, air conditioners and refrigerators, crop fumigant	Greenhouse Gas, Depletes ozone, increases UV radiation	Skin cancer from UV	Prevent use, Montreal Protocol
CO	Air (indoor and outdoor)	Incomplete combustion of fossil fuels	No direct effect on plants	Blood's ability to carry oxygen impaired, fatigue, nausea, can be fatal	Maintenance to improve combustion efficiency, ventilation
CO ₂	Air (indoor and outdoor)	Respiration and combustion of organic material	Greenhouse gas,	High concentration can cause headaches	Reduce dependence on fossil fuels, sequester, ventilation, NOT covered under Clean Air Act, Kyoto Protocol
Dioxins	Outdoor soil and water	By-product of industrial process including combustion of PCB's	Bioaccumulates in fat, animal toxicity, persistence, affects endocrine and immune system	Rashes and skin discoloration, teratogen, carcinogen	Prevention, physical removal and permanent storage (TSCA)
Disease agents	Water	Animal and human waste (feces)	Bacteria, typhoid, protozoa	Nausea, diarrhea, dysentery	Disinfection, prevent feces from impacting water
Formaldehyde	Air (indoor)	Building materials such as plywood, textiles, furniture		Dizziness, rash, headaches and nausea, cancer	Prevention and ventilation

Lead	Air, soil, water	Leaded gas, paint, solder joints, fittings, batteries, utilities	Decreased plant growth, animal sterility	Developmental delays, abdominal pain, death, hyperactivity, bioaccumulates in bone	Phased out of gas, 1978 phased out of paint, remove or paint over, TSCA; successfully reduced through laws
Mercury	Air, soil, water	Coal combustion, incineration, smelting	Bioaccumulates and biomagnifies, methylated form most toxic	Mutagen, teratogen, developmental delays	Prevention, TSCA, RCRA, CAA, CWA
NO _x	Air, water	Combustion of fossil fuels, primary air pollutant	Forms HNO ₃ , leads to eutrophication, forms industrial smog	Forms ozone (see effects), impaired oxygen transport or death, hypertension	Decrease dependence on fossil fuels
Oil	Water, soil	Natural release, surface runoff, leaks or spills	Suffocation, habitat destruction, toxicity	Toxicity	Prevention, clean-up with booms, skimmers, phytoremediation and bacterial remediation
Oxygen Demanding Waste	Water	Sewage, food processing waste, feed lots and agricultural fields	Reduced DO (anoxia)	Increased pathogenic organisms leads to pathogenic responses	Prevention, CWA
Ozone	Air	Secondary air pollutant from NO _x and VOCs, formed by photochemical reaction	Ground level damages plant cells, reduces crop yield	Upper respiratory irritant	Prevention
Particulate Matter	Air	Solid and liquid droplets of air, soot, dust, soil and smoke	Impairs photosynthesis, acid deposition, reduces visibility	Upper respiratory irritant	Prevention, electrostatic precipitators
Pesticides	Air, water, soil	Agriculture, golf courses, urban areas	Bioaccumulates, persistent, toxic	Neurotoxin	Prevention, FIFRA, CWA
Phosphates	Water	Fertilizer, sewage	Eutrophication		Prevention
Radon	Air (indoor)	Decay product of uranium		2 nd leading cause of lung cancer	Ventilation

SO ₂	Air	Combustion of coal	Acid deposition, photo-chemical smog, low pH	Respiratory distress	Wash coal, use anthracite (lower S content), coal liquification, Successfully reduced by CAA Cap & Trade Program
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