

Common Air Pollutants Reference Sheet

Description	Pollutant Source	Health Effects	Environmental Effects	Property Damage
<p>Ozone O₃ A gaseous pollutant; ground-level ozone is the main component of smog</p>	Formed in a chemical reaction of pollutants (vehicle exhaust and other fumes) in the presence of sunlight; VOCs and NO _x	Breathing problems, lung damage, respiratory track problems, asthma, irritated eyes, stuffy nose, reduced resistance to colds and other infections. May speed up aging of lung tissue.	Damages vegetation, plants and trees. Smog reduces visibility.	Damages rubber and fabrics.
<p>Nitrogen Dioxide NO₂ (one of the nitrogen oxides, NO_x) A gaseous compound made of nitrogen and oxygen; a smog-forming chemical</p>	Burning of fossil fuels in vehicles, power plants and coal-burning stoves. Cars are an important NO ₂ source.	Lung damage, illnesses of breathing passages and lungs (respiratory system).	Reacts in atmosphere to form acid rain (acid aerosols) that damages trees, forests and lakes. Forms ozone and other pollutants (smog) that reduce visibility.	Acid aerosols deteriorate (eat away) stone on buildings, statues and monuments.
<p>Carbon Monoxide CO A colorless and odorless gas</p>	<p>Vehicles burning gasoline (incomplete burning of fossil fuels). Forest fires.</p> <p>Indoor sources, such as kerosene, wood-burning, natural gas, coal or wood-burning stoves and heaters.</p> <p>CO in motor vehicle emissions contributes ~60% of all CO emissions nationwide (95% in cities).</p> <p>CO concentrations usually peak during the colder months.</p>	<p>Headaches, reduced mental alertness, death. Reduces ability of blood to bring oxygen to body's cells and tissues.</p> <p>May cause heart and circulatory (blood vessel) damage and problems; especially hazardous to people who have damaged lungs or breathing passages.</p>		

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<p>Particulate Matter Very small particles of soot, dust or other matter, including tiny droplets of liquids</p>	Smoke and soot from the burning of wood, diesel and other fuels; industrial and power plants; agriculture (plowing, burning off fields); unpaved roads; windblown dust.	Eye, nose and throat irritation; lung damage; bronchitis; early death.	Main source of haze that reduces visibility. Damages crops.	Ashes, soots, smokes and dusts dirty and discolor clothes, furniture, structures, statues and other property.
<p>Sulfur Dioxide SO₂ (one of the sulfur oxides, SO_x) A gaseous compound made of sulfur and oxygen</p>	Burning of coal and oil in power plants and industries, especially high-sulfur coal from the eastern U.S.; industrial refinery processing (of paper, metals); coal-burning stoves.	Eye irritation; breathing problems; may cause permanent lung damage.	Reacts in atmosphere to form acid rain (acid aerosols) that damages trees, forests and lakes. Kills aquatic life. Acid aerosols reduce visibility.	Acid aerosols deteriorate (eat away) stone on buildings, statues and monuments.
<p>Lead Pb A metallic element</p>	Vehicles burning leaded gasoline (being phased out), lead paint (houses, cars), smelters (metal refineries), manufacture of lead storage batteries.	Brain, kidney and other nervous system damage. Causes digestive and other health problems. Children are at special risk. Some lead-containing chemicals cause cancer in animals.	Can contaminate and harm crops, wildlife, and livestock.	
<p>VOCs* Volatile organic compounds; smog-formers</p>	Released from burning fuel (gasoline, oil, wood coal, natural gas, etc.), solvents, paints glues and other products used at work or at home. Cars are an important source. Includes chemicals such as benzene, toluene, methylene chloride and methyl chloroform.	In addition to ozone (smog) effects, many VOCs cause serious health problems such as cancer.	In addition to ozone (smog) effects, some VOCs such as formaldehyde and ethylene harm plants.	
<p>* All VOCs contain carbon (C), the basic chemical element found in living beings. Carbon-containing chemicals are called organic (O). Volatile (V) chemicals escape into the air easily. Many are also hazardous air pollutants that can cause very serious illnesses. The EPA does not list VOCs as criteria air pollutants, but they are included in this list of pollutants because efforts to control smog target VOCs for reduction.</p>				

Source: Air Quality Planning & Standards, U.S. Environmental Protection Agency,
http://www.epa.gov/oar/oaqps/peg_caa/pegcaa11.html#topic11