

Sulfur Oxides

Sulfur oxides (SO_x) are colorless gases that are the result of the burning of sulfur. All fuels used (oil, coal, natural gas, wood, etc.) contain some sulfur, which reacts with oxygen during combustion. The main source of SO_x is the burning of fossil fuels, particularly coal, at industrial facilities. Sulfur dioxide (SO₂) is used as an indicator of all SO_x concentrations because it is easily measured. SO₂ is known to irritate the respiratory system and is particularly harmful to people who suffer from respiratory diseases such as asthma and chronic bronchitis. It contributes to the formation of acid rain which can damage lakes, aquatic life, building materials and plants.



Lead (Pb)

Lead is a heavy metal. Major sources of lead are ore/metal processing and leaded aviation fuel. Once in the body, lead distributes through the blood and accumulates in the bones. It can affect the nervous system, kidney function, immune system, reproductive and development systems and the cardiovascular system. The most common effects are neurological effects in children and high blood pressure/heart disease in adults. Young children are sensitive to low levels of lead, which may add to behavioral problems, learning deficits and low IQ. Lead accumulates in soil and water and stays in the environment. Ecosystems near sources of lead have many adverse effects including losses in biodiversity, changes in composition and decreased growth and reproductive rates.

Air Quality Index

The Air Quality Index (AQI) reports daily air quality in your area to let you know how clean or polluted the air is near you and what health effects can be caused by poor air quality.

To check your local area, visit the **AirNow** website:

Color Code	AQI Value	Actions to Protect Your Health
Green	Good (0-50)	None.
Yellow	Moderate (51-100)	Unusually sensitive people should reduce prolonged or heavy exertion outdoors.
Orange	Unhealthy for Sensitive Groups (101-150)	Sensitive groups should reduce prolonged or heavy exertion outdoors: People with heart and lung disease Children and older adults People that are active outdoors
Red	Unhealthy (151-200)	Sensitive groups should avoid prolonged or heavy exertion outdoors. Everyone should reduce prolonged or heavy exertion outdoors.
Purple	Very Unhealthy (201-300)	Sensitive groups should avoid all physical activity outdoors. Everyone should avoid prolonged or heavy exertion outdoors.

Additional Information

For more information about air quality check out these additional resources:

Air now AQI

<https://www.airnow.gov/>

CDC Air Quality

<https://www.cdc.gov/air/default.htm>

South Coast Air Quality Management District

<http://www.aqmd.gov/>



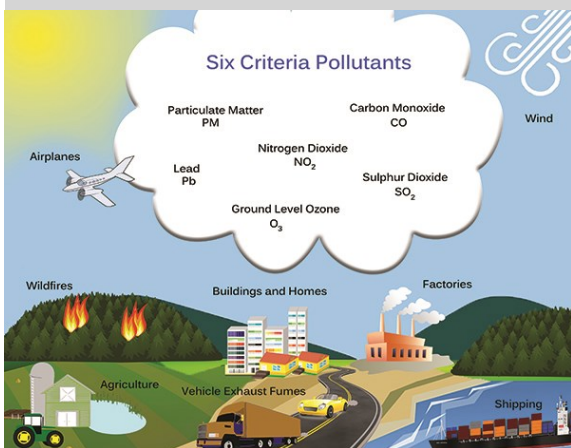
Air Quality & Criteria Pollutants



Provided by
The Soboba Tribal
Environmental Department
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The Clean Air Act requires EPA to set National Ambient Air Quality Standards for six common air pollutants (also known as "criteria air pollutants") These pollutants are particulate matter (PM), nitrogen oxides, carbon monoxide, photochemical oxidants (including ozone), sulfur oxides, and lead. The EPA calls these pollutants "criteria" air pollutants because they set National Ambient Air Quality Standards (NAAQS) for them based on the criteria, which are characterizations of the latest scientific information regarding their effects on health or welfare. These pollutants are found all over the U.S. and can cause harm to your health and the environment.



Criteria Pollutants

Particulate Matter

Particulate Matter, or PM, are extremely small particles and liquid droplets that are made up of many components including organic chemicals, metals and dust particles. PM can come directly from sources such as forest fires, residential burning, road dust, solvents and fossil fuel combustion. It can also form from gases emitted from power plants, industrial processes, and automobiles. These small particles can easily enter the lungs and once inhaled, the PM can affect the heart, lungs, and cause serious health effects. Effects include: irritation of the airways, coughing, difficulty breathing, decreased lung function, aggravated asthma, development of chronic bronchitis, irregular heartbeat and premature death in people with heart or lung disease. Particulate matter is broken down into two categories: PM_{2.5} and PM₁₀. PM_{2.5} is particulate matter 2.5 micrometers or less in diameter (about 40 fit in the width of a human hair). PM₁₀ is particulate matter less than 10 micrometers in diameter (about 5 fit in the width of a human hair).

Nitrogen Oxides

Nitrogen oxides (NO_x) are a group of highly reactive gasses. NO_x forms from emissions from cars, trucks and buses, power plants, and off-road equipment. NO_x emissions result primarily from the combustion of natural gas, oil, and coal. NO_x is linked with adverse effects on the respiratory system including airway inflammation and irritating asthma. NO_x can react with ammonia, moisture, and other compounds to form other pollutants such as particulate matter and ozone.

Carbon Monoxide

Carbon monoxide (CO) is a colorless and odorless gas emitted from combustion processes. Motor vehicles produce about 60 % of carbon monoxide nationwide. In cities, it may be as high as 95%. Other sources include industrial processes, wildfires and non-transportation fuel combustion. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At very high levels, CO can cause death.

Ozone

Ozone is created by a reaction of nitrogen oxides, volatile organic chemicals (chemicals that have carbon and evaporate very easily), and sunlight. Ozone is the main part of smog and at ground level ozone is dangerous because its harmful effects. Sources of ozone include vehicle exhaust, industrial processes, plants, gasoline vapors, and chemical products or solvents. Inhaling ozone can cause chest pain, coughing, throat irritation, and congestion. It can make respiratory conditions like asthma worse. With longer exposure, the lungs can become inflamed or scared which reduces their ability to function. Ozone also damages vegetation and ecosystems.

AIR POLLUTION - THE SILENT KILLER

Every year, around **7 MILLION DEATHS** are due to exposure from both outdoor and household air pollution.

Air pollution is a major environmental risk to health. By reducing air pollution levels, countries can reduce:

- Stroke
- Heart disease
- Lung cancer, and both chronic and acute respiratory diseases, including asthma