



Air Quality Index

What is Air Quality?

Air quality is the measure of how clean or polluted the air is. Monitoring air quality is critical to our health and the health of the environment. Air quality is measured with the Air Quality Index (AQI). The AQI runs from 0 to 500 degrees.

Why do we measure Air Quality?

The AQI provides a guideline to the public of how polluted the air currently is or how polluted it is expected to become.

Calculation of the AQI involves an air pollutant concentration (ppm, part per million) over a specified period of time to provide the dose of air pollutant.

How does an Air Quality sensor work? What is the significance of studying Air Quality?

The air quality sensor is made up of tin dioxide that acts like a variable resistor changing its resistance value according to the concentration of gas. If the gas concentration is high, the resistance decreases, and if the gas concentration is low, the resistance increases.

Health risks increase as the AQI rises and can increase due to air emissions, a forest fire, or lack of rain or winds to clear the air. Public health organizations use the AQI to determine if advisories or emergency plans are required during times of high pollution. Typical gases that are monitored include ground-level ozone, particulates, sulfur dioxide, carbon monoxide and nitrogen dioxide.

What data is collected? Units of measure?

Gas Sensors are used to detect leaks or excessive amounts of gases like ammonia, nitrogen oxide, alcohols, aromatic compounds, sulfides and smoke. They provide a means to measure (in ppm) and monitor air quality.

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Resources

[Air Quality Index \(AQI\) | AirNow.gov](#)

[Air Quality | Air | CDC](#)

[Air Quality \(weather.gov\)](#)

Extension Activities

The Air We Breathe





Glossary

[Part per million](#) (noun): one milligram per liter (mg/l), would be equal to putting ONE drop of water from an eyedropper into 10 gallons of water

[Particulate](#) (noun): a substance made up of very small separate particles

[Resistor](#) (noun): a device offering electrical resistance

[Resistance](#) (noun): an opposing or slowing force

