

Air Quality Index - How is Air Quality Measured?

Air Quality is measured using a metric called Air Quality Index (AQI). AQI will display the changes in air pollution in the atmosphere. Clean air is extremely important to maintain good health and the environment. Our atmosphere is predominantly made up of 2 important gases that are vital for life on earth, these are Oxygen and Nitrogen. AQI keeps a tab on 8 major air pollutants in the atmosphere namely,

1. Particulate Matter (PM10)
2. Particulate Matter (PM2.5)
3. Nitrogen Dioxide (NO₂)
4. Sulphur Dioxide (SO₂)
5. Carbon Monoxide (CO)
6. Ozone (O₃)
7. Ammonia (NH₃)
8. Lead (Pb)

How is PM 2.5 Measured?

The most common measurement used to measure air quality is PM 2.5 and PM 10. It measures the particles in micrograms per cubic metre. PM 2.5 refers to the concentration of microscopic particles less than 2.5 microns in diameter and PM 10 refers to the concentration of particles less than 10 microns in diameter. Across the globe, all the countries use the same metrics for measuring the health of atmospheric air. India measures 2 additional pollutants namely lead and ammonia. AQI value of less than 50 is considered safe.

What Instrument is used to Measure Air Quality?

Some of the instruments used are given below.

1. PCE-RCM 05
2. PCE-HFX 100
3. PCE-RCM 8

How Does PM get into the air?

PM stands for Particulate Matter. It is a term used to define a mixture of solid particles and liquid droplets found in the air. Some particles such as dust, smoke, soot are visible to the naked eye, but other particulate matters are too small that they are only visible in the electron microscope. Some of the sources of PM are construction sites, fire, fields, unpaved roads etc. Most of the particles are formed due to complex reactions of chemicals such as sulfur dioxide and nitrogen oxides. These are the pollutants emitted by automobiles, industries, power plants etc.

Air Quality Index

1. National Air Quality Index was launched in 2014 to measure the air quality in terms of six categories:

- Good
 - Satisfactory
 - Moderately Polluted
 - Poor
 - Very Poor and
 - Severe
2. [Central Pollution Control Board \(CPCB\)](#) has developed this Air Quality Index in consultation with IIT-Kanpur and air quality-professionals and experts.
 3. The states/cities are categorised in the range of 0-500 to measure its air quality:

Air Quality Index	Category
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe