空气质量指数 AQI
空气污染指数 API

空气质量指数 AQI(Air Quality Index)，也叫空气污染指数 API(Air Pollution Index)。空气质量周报的主要内容为：空气污染指数、空气质量级别和首要污染物。空气污染指数就是将监测的几种空气污染物的浓度值简化成为单一的数值形式，并分级表示空气污染程度和空气质量状况。污染指数的分级标准是：1、污染指数在 50 以下对应的空气质量级别为一级，即优；2、污染指数在 50 以上、100 以下对应的空气质量级别为 2 级，即良；3、污染指数在 100 以上、200 以下对应的空气质量级别为 3 级，即轻度污染；4、污染指数在 200 以上、300 以下对应的空气质量级别为 4 级，即中度污染；5、污染指数在 300 以上对应的空气质量级别为 5 级，即重度污染。

根据我国空气污染的特点，目前计入空气污染指数的项目暂定为：二氧化硫、氮氧化物和总悬浮颗粒物。二氧化硫主要来自燃煤废气，它是生成酸雨的元凶；氮氧化物主要来自于汽车尾气；总悬浮颗粒物主要来自燃煤排放的烟尘和地面扬起的灰尘。取这 3 种污染指数最大的作为首要污染物，并将首要污染物的污染指数确定为该城市的空气污染指数。

AQI Numbers

An index with numbers can be a quick way to tell people how good or bad something is. For example, you might say your school lunch is a 1 (very good) or a 5 (yucky). The Air Quality Index uses numbers from 0 to 500. These numbers are used to decide the AQI color. On days measuring less than 100, the air is clean. If the air is dirtier, the numbers get bigger. On days measuring more than 100, the air can be bad for you to breathe.

What is the AQI?

The EPA and your State environmental agency measure pollution in the air. Then they use the Air Quality Index, or AQI, to tell the people about the air. An index can be a quick way to tell people how good or bad something is. The AQI uses colors, and numbers, and words to tell you about the air.

Here is how the AQI numbers match up with the AQI colors:

AQI Numbers	Colors
0 to 50	Green
51 to 100	Yellow

101 to 150	Orange
151 to 200	Red
201 to 300	Purple
301 to 500	Maroon (usually not shown)

AQI Colors

These are the AQI colors. Each day the AQI is one of these colors. The colors tell you how healthy the air is to breathe that day. The colors go from Green to Yellow to Orange to Red to Purple to Maroon, each color telling you that the air is less clean than the color before. Green is the best air quality.

GREEN | YELLOW | ORANGE | RED | PURPLE | MAROON

When the AQI is green, the air is clean!

We see a lot of Yellow, Orange, and Red AQI colors in the summer when air quality often isn't at its best. Purple and Maroon are the worst air quality! Luckily we hardly ever see the AQI get to Purple. Because of people working to clean up the air, the AQI has not reached Maroon in many years! This is why Maroon is usually not shown with the AQI.

What is the AQI?

The AQI is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. The AQI focuses on health effects you may experience within a few hours or days after breathing polluted air. EPA calculates the AQI for five major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution (also known as particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. For each of these pollutants, EPA has established national air quality standards to protect public health.

*AQI becomes popular standard environ parameter for air quality worldwide now

Understanding the AQI

The purpose of the AQI is to help you understand what local air quality means to your health. To make it easier to understand, the AQI is divided into six categories:

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
When the AQI is in this range:	*...air quality conditions are:*	*...as symbolized by this color:*
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Each category corresponds to a different level of health concern. The six levels of health concern and what they mean are:

- "Good" The AQI value for your community is between 0 and 50. Air quality is considered satisfactory, and air pollution poses little or no risk.

- "Moderate" The AQI for your community is between 51 and 100. Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people. For example, people who are unusually sensitive to ozone may experience respiratory symptoms.
- "Unhealthy for Sensitive Groups" When AQI values are between 101 and 150, members of sensitive groups may experience health effects. This means they are likely to be affected at lower levels than the general public. For example, people with lung disease are at greater risk from exposure to ozone, while people with either lung disease or heart disease are at greater risk from exposure to particle pollution. The general public is not likely to be affected when the AQI is in this range.
- "Unhealthy" Everyone may begin to experience health effects when AQI values are between 151 and 200. Members of sensitive groups may experience more serious health effects.
- "Very Unhealthy" AQI values between 201 and 300 trigger a health alert, meaning everyone may experience more serious health effects.
- "Hazardous" AQI values over 300 trigger health warnings of emergency conditions. The entire population is more likely to be affected.

How is a community's AQI calculated?

Air quality is measured by monitors that record the concentrations of the major pollutants each day at more than a thousand locations across the country. These raw measurements are then converted into AQI values using standard formulas developed by EPA. An AQI value is calculated for each pollutant in an area (ground-level ozone, particle pollution, carbon monoxide, sulfur dioxide, and nitrogen dioxide). The highest AQI value for the individual pollutants is the AQI value for that day. For example, if on July 12 a certain area had AQI values of 90 for ozone and 88 for sulfur dioxide, the AQI value would be 90 for the pollutant ozone on that day.

What are typical AQI values in most communities?

In many U.S. communities, AQI values are usually below 100, with values greater than 100 occurring just several times a year. Typically, larger cities have more severe air pollution problems, and the AQI in these areas may exceed 100 more often than in smaller cities. AQI values higher than 200 are infrequent, and AQI values above 300 are extremely rare.

AQI values can vary from one season to another. In winter, for example, carbon monoxide may be high in some areas because the cold weather makes it difficult for car emission control systems to operate effectively. In summer, ozone may be a significant air pollutant because it forms in the presence of heat and sunlight. Particle pollution can be elevated at any time of the year.

AQI values also can vary depending on the time of day. For example, ozone levels often peak in the afternoon, while carbon monoxide is usually a problem during morning or evening rush hours. Particle pollution can be high at any time of day.

Air Quality Index (AQI): Ozone

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100*	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion outdoors.
101-150	Unhealthy for Sensitive Groups	Active children and adults, and people with lung disease, such as asthma, should reduce prolonged or heavy exertion outdoors.
151-200	Unhealthy	Active children and adults, and people with lung disease, such as asthma, should avoid prolonged or heavy exertion outdoors. Everyone else, especially children, should reduce prolonged or heavy exertion outdoors.
201-300	Very Unhealthy	Active children and adults, and people with lung disease, such as asthma, should avoid all outdoor exertion. Everyone else, especially children, should avoid prolonged or heavy exertion outdoors.
301-500	Hazardous	Everyone should avoid all physical activity outdoors.

* Generally, an AQI of 100 for ozone corresponds to an ozone level of 0.08 parts per million (averaged over 8 hours).

Air Quality Index (AQI): Particle Pollution

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100*	Moderate	Unusually sensitive people should consider reducing prolonged or heavy exertion.
101-150	Unhealthy for Sensitive Groups	People with heart or lung disease, older adults, and children should reduce prolonged or heavy exertion.
151-200	Unhealthy	People with heart or lung disease, older adults, and children should avoid prolonged or heavy exertion. Everyone else should reduce prolonged or heavy exertion.
201-300	Very Unhealthy	People with heart or lung disease, older adults, and children should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy exertion.
301-500	Hazardous	People with heart or lung disease, older adults, and children should remain indoors and keep activity levels low. Everyone else should avoid all physical activity outdoors.

*An AQI of 100 for particles up to 2.5 micrometers in diameter corresponds to a level of 40 micrograms per cubic meter (averaged over 24 hours). An AQI of 100 for particles up to 10 micrometers in diameter corresponds to a level of 150 micrograms per cubic meter (averaged over 24 hours).

Air Quality Index (AQI): Carbon Monoxide (CO)

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None
51-100*	Moderate	None
101-150	Unhealthy for Sensitive Groups	People with heart disease, such as angina, should reduce heavy exertion and avoid sources of CO, such as heavy traffic.
151-200	Unhealthy	People with heart disease, such as angina, should reduce moderate exertion and avoid sources of CO, such as heavy traffic.
201-300	Very Unhealthy	People with heart disease, such as angina, should avoid exertion and sources of CO, such as heavy traffic.
301-500	Hazardous	People with heart disease, such as angina, should avoid exertion and sources of CO, such as heavy traffic. Everyone else should reduce heavy exertion.

- An AQI of 100 for carbon monoxide corresponds to a CO level of 9 parts per million (averaged over 8 hours).

Air Quality Index (AQI): Sulfur Dioxide (SO_2)

Index Values	Levels of Health Concern	Cautionary Statements
0-50	Good	None

51-100*	Moderate	None
101-150	Unhealthy for Sensitive Groups	People with asthma should consider reducing exertion outdoors.
151-200	Unhealthy	Children, asthmatics, and people with heart or lung disease should reduce exertion outdoors.
201-300	Very Unhealthy	Children, asthmatics, and people with heart or lung disease should avoid outdoor exertion. Everyone else should reduce exertion outdoors.
301-500	Hazardous	Children, asthmatics, and people with heart or lung disease should remain indoors. Everyone else should avoid exertion outdoors.

- An AQI of 100 for sulfur dioxide corresponds to an SO_2 level of 0.14 parts per million (averaged over 24 hours).

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