



# Particulate Matter - Overview

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## **What is particulate matter?**

Particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as "respirable particulate matter" or "PM 10." Fine particles are 2.5 microns or less in diameter (PM 2.5) and can contribute significantly to regional haze and reduction of visibility in California.

## **Health and Welfare Effects from Exposure to Ambient Levels of Particulate Matter**

Extensive research indicates that exposure to outdoor PM 10 and PM 2.5 levels exceeding current air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing visibility, the acidic portion of PM (nitrates, sulfates) can harm crops, forests, aquatic and other ecosystems.

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**PM and Health**

In June 2002, the ARB adopted new ambient air quality standards for PM 10 and PM 2.5, resulting from an extensive review of the health-based scientific literature. View [technical and legal documents relevant to the PM standard setting process](#).

California Ambient Air Quality Standards for PM		
Averaging Time	PM 10	PM 2.5
Annual *	20 µg/m <sup>3</sup>	12 µg/m <sup>3</sup>
24 Hours	50 µg/m <sup>3</sup>	See Below **

\* Annual Arithmetic Mean

\*\* There is no separate 24-hour PM 2.5 standard in California; however, the U.S. EPA

promulgated a 24-hour PM 2.5 ambient air quality standard of 35  $\mu\text{g}/\text{m}^3$ .

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View a [brief history](#) of the ambient air quality standards for PM.

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For more information on Ambient Air Quality Standards, please contact [Linda Smith](#) at (916) 327-8225.