

Introduction to the National Ambient Air Quality Standards (NAAQS)

What are the NAAQS?

The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) to safeguard public health and the environment against widespread pollutants from a variety of sources. The Clean Air Act established two types of national air quality standards. **Primary standards** set limits to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. **Secondary standards** set limits to protect public welfare from hazards including visibility impairment and damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for six principal pollutants, which are called “criteria” pollutants. These are listed below. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$).

NAAQS Review Process:

The Clean Air Act requires periodic review of both the science upon which the standards are based, and the standards themselves. The review process begins with a workshop to obtain the input of the Clean Air Science Advisory Committee (CASAC), EPA-contracted outside scientists, and the public, regarding policy-relevant questions and science issues that should be addressed in the review of the standard. A draft integrated science/policy plan outlining the schedule, process, and a set of key policy-relevant issues is developed from this workshop.

Next, EPA drafts an Integrated Science Assessment (ISA), or a concise evaluation, integration, and synthesis of the most policy-relevant science, including key science judgments that will be used in conducting risk and exposure assessments. CASAC and the public have an opportunity to comment on the draft ISA. The ISA is supported by a more detailed and comprehensive science assessment support document. A Risk/Exposure Assessment is drafted by EPA in concert with the development of the first draft ISA. The Risk/Exposure Assessment focuses on key results, observations, and, uncertainties.

Following the ISA and Risk/Exposure Assessment, EPA develops a policy assessment that reflects the Agency’s views. This document identifies conceptual evidence- and risk-based approaches for reaching policy judgments, discusses what the science and risk/exposure assessments say about the adequacy of the current standards, and presents any preliminary risk/exposure information associated with alternative standards. The policy assessment is published in the Federal Register as an Advance Notice of Proposed Rulemaking (ANPR), allowing for review and comment by CASAC and the public. Issuance of a proposed and final rule completes the rulemaking process.

National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m ³)	8-hour ⁽¹⁾	None	
	35 ppm (40 mg/m ³)	1-hour ⁽¹⁾		
Lead	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM ₁₀)	150 µg/m ³	24-hour ⁽²⁾	Same as Primary	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual ⁽³⁾ (Arithmetic Mean)	Same as Primary	
	35 µg/m ³	24-hour ⁽⁴⁾	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour ⁽⁵⁾	Same as Primary	
	0.08 ppm (1997 std)	8-hour ⁽⁶⁾	Same as Primary	
	0.12 ppm	1-hour ⁽⁷⁾ (Applies only in limited areas)	Same as Primary	
Sulfur Dioxide	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m ³)	3-hour ⁽¹⁾
	0.14 ppm	24-hour ⁽¹⁾		

¹ Not to be exceeded more than once per year.

² Not to be exceeded more than once per year on average over 3 years.

³ To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

⁴ To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).

⁵ To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

⁶ (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

(b) The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

⁷ (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.

(b) As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) areas.