

Nitrogen Dioxide - Overview

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What is Nitrogen Dioxide?

Nitrogen dioxide (NO₂) is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract. This pollutant is also an essential ingredient in the formation of ground-level ozone pollution. NO₂ is one of the nitrogen oxides emitted from high-temperature combustion processes, such as those occurring in trucks, cars and power plants. In the presence of sunlight, complex reactions of nitrogen oxides with ozone and other air pollutants produce the majority of NO₂ in the atmosphere. Indoors, home heaters and gas stoves also produce substantial amounts of NO₂.

Health and Welfare Effects from Exposure to Ambient Levels of Nitrogen Dioxide

Exposure to NO₂ along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO₂ above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO₂ exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.

Ongoing Review of NO₂ Standard

In February 2007, the Air Resources Board established a new annual average NO₂ standard of 0.030 ppm and lowered the one-hour NO₂ standard to 0.18 ppm, after an extensive review of the scientific literature. [For information on the nitrogen dioxide standards, click here.](#)

Ambient Air Quality Standards for Nitrogen Dioxide		
Averaging Time	California Standard	Federal Standard
Annual*	0.030 ppm	0.053 ppm
1 hour	0.18 ppm	0.100 ppm

* Annual Arithmetic Mean