

Nitrogen dioxide

Nitrogen dioxide (NO₂) is a brownish, highly reactive gas that is present in all urban atmospheres. It is one of the several nitrogen oxides - NO_x - but one of the most prominent air pollutants. This reddish-brown toxic gas has a characteristic sharp, biting odor and is like a brown haze hanging over our cities.

Nitrogen oxides form when fuels are burnt at high temperatures. The major emissions sources are the engines of vehicles and ships (transportation) and stationary combustion sources such as heating, power generation and industrial boilers (Industry, Keeping Warm and Cooking).

Nitrogen and oxygen in the air react with each other under these high temperatures to form oxides of nitrogen (NO_x).

Why nitrogen dioxide is toxic to life

Prolonged exposure to nitrogen dioxide can irritate the lungs and lower a person's resistance to respiratory infections such as influenza. Symptoms of bronchitis in asthmatic children increase with long-term exposure to NO₂. Reduced lung function growth is also linked to NO₂

The brownish gas reacts with moisture in the air to form nitric acid, which can corrode buildings and monuments, and toxic organic nitrates, which contribute to acid rain and the acidification of lakes, rivers, and streams. Nitrogen dioxide also plays a major role in producing particulate matter (PM) and ground-level ozone or smog.