Sulfur dioxide (SO2) is one of a group of highly reactive gasses known as “oxides of sulfur.”  The largest sources of SO2 emissions are from fossil fuel combustion at power plants (73%) and other industrial facilities (20%).  Smaller sources of SO2 emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment.  SO2 is linked with a number of adverse effects on the respiratory system.[[1]](#footnote-1)

EPA’s National Ambient Air Quality Standard for SO2 is designed to protect against exposure to the entire group of sulfur oxides (SOx).  SO2 is the component of greatest concern and is used as the indicator for the larger group of gaseous sulfur oxides (SOx).  Other gaseous sulfur oxides (e.g. SO3) are found in the atmosphere at concentrations much lower than SO2. >>>> Emissions that lead to high concentrations of SO2 generally also lead to the formation of other SOx.  Control measures that reduce SO2 can generally be expected to reduce people’s exposures to all gaseous SOx.  This may have the important co-benefit of reducing the formation of fine sulfate particles, which pose significant public health threats. >>> SOx can react with other compounds in the atmosphere to form small particles. These particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death.  EPA’s NAAQS for particulate matter (PM) are designed to provide protection against these health effects.[[2]](#footnote-2)

EPA issued the final primary NAAQS for SO2 on June 2, 2010.  In early June 2013, after the consideration of recommendations from air agencies, EPA intends to [designate](http://www.epa.gov/so2designations/) as "nonattainment" those areas with air quality monitors that violate the SO2 standard. EPA has also developed an updated strategy for identifying and addressing unhealthy levels of SO2 in the rest of the country. This strategy recognizes that existing SO2 monitors may not adequately characterize air quality around many of the largest SO2 sources across the country. Accordingly, the strategy presents a process and timetable by which states would characterize air quality in these areas, either through expanded air quality monitoring or air quality modeling techniques.[[3]](#footnote-3)

1. <http://www.epa.gov/airquality/sulfurdioxide/> [↑](#footnote-ref-1)
2. <http://www.epa.gov/airquality/sulfurdioxide/health.html> [↑](#footnote-ref-2)
3. <http://www.epa.gov/airquality/sulfurdioxide/implement.html> [↑](#footnote-ref-3)