



WHY AIR QUALITY SPECIALISTS SHOULD MEASURE FOR SULFUR DIOXIDE (SO₂) IN HOMES & OFFICES



What is Sulfur Dioxide? (SO₂)

Sulfur Dioxide (SO₂) is a highly reactive gas that is part of a larger group of sulfur oxides or SO_x gases. According to the U.S. Environmental Protection Agency, the largest sources of SO₂ emissions are due to “fossil fuel combustion at power plants (73%) and other industrial facilities (20%)”.

Although residents in homes and offices at or near the “fenceline” of power plants and industrial facilities are most at risk of SO₂ exposure, the toxic gas can be leaked within any building. Common sources of SO₂ in homes or offices can include tobacco smoke, improperly vented gas appliances, oil furnaces, kerosene heaters, wood or coal stoves, automobile exhaust from attached garages and malfunctioning chimneys.

Adverse Health Effects of Sulfur Dioxide (SO₂) Exposure

According to the Occupational Safety and Health Administration (OSHA), the permissible exposure limit for SO₂ in homes and offices should not exceed 5 ppm (13 mg/m³) over an 8-hour period. However, SO₂ levels as low as 0.25 ppm have been shown to cause respiratory discomfort in vulnerable populations such as asthmatics and those with respiratory concerns*.

Exposure to SO₂ can lead to a variety of negative health issues. At low concentrations, SO₂ can cause irritation of the nose and throat, difficulty breathing, and respiratory distress. Long term exposure to even low levels of sulfur dioxide can cause lung function to deteriorate, aggravate existing heart disease and increase complications for people with asthma. Exposure to high levels of SO₂ can be life threatening even during short term exposure.

Concentration		Effects
< 0.25 PPM	Good	Should produce minimal health effects or occupant complaints
0.25 to < 5 PPM	Marginal	Could produce some negative health effects, especially among asthmatics and those with respiratory issues
> 5 PPM	Critical	Likely to cause serious health effects or discomfort among all populations

Monitoring Solution: Si-CA 230 & Si-AQ Expert Indoor Air Quality Monitors

The measurement of the concentration of SO₂ commonly found in indoor environments can be performed using the Sauermann [Si-CA 230](#) Portable Gas Analyzer and the [Si-AQ Expert](#) IAQ monitor.

These specialized monitoring instruments utilize the latest sensor technology that allow air quality analysts, environmental safety companies, laboratory technicians, etc., to quickly and accurately monitor the levels of dangerous SO₂ present in the breathing environments of homes, office building, laboratories, or industrial facilities. These monitors include software with real-time continuous data logging, wireless connection, and can be customized to monitor up to 11 different parameters relevant to indoor air quality.



*Toxic Substances Portal: Sulfur Dioxide. Agency for Toxic Substances Disease Registry. United States Centers for Disease Control.
<http://www.atsdr.cdc.gov/phs/phs.asp?id251&tid=46>