

AIR POLLUTION:

WHAT IS SULPHUR DIOXIDE?

Sulphur dioxide (SO₂) is one of a group of gases known as sulphur oxides (SO_x). SO₂ has some direct health effects but is also an important chemical leading to the formation of particulate matter (PM), a component of smog. SO₂ also contributes to the formation of acid rain.



WHO IS MOST AT RISK FROM AIR POLLUTION?

Even healthy young adults can experience health issues on days when the air is heavily polluted but some groups are more at risk:

- Children
- Seniors
- People with asthma, chronic obstructive pulmonary disease (COPD), cardiovascular diseases, diabetes
- Active people of all ages who exercise or work hard outdoors



Children / Seniors

HEALTH EFFECTS OF SULPHUR DIOXIDE

Health effects of SO₂, especially for people with respiratory problems, include:



Increased lung problems



Increased hospital admissions



Increased medical visits

WHERE DO SULPHUR OXIDES COME FROM?

SO_x comes mainly from man-made sources, but can also come from natural sources. Main sources of SO_x are (but not limited to):



Mining, smelting and refining of metal ores



Electricity generation from coal



Oil and gas industry



Ships



Volcanoes



Airplanes

HOW CAN I PROTECT MYSELF FROM AIR POLLUTION?

Know the best times to be active outdoors:

- Check the **Air Quality Health Index** in your community (airhealth.ca)
- If you have a heart or lung condition, talk to your health care professional about additional ways to protect your health when air pollution levels are higher

Ways to reduce exposure:

- Avoid or reduce strenuous outdoor activities when air pollution levels are higher

WHAT ACTION IS THE GOVERNMENT OF CANADA TAKING ON SULPHUR DIOXIDE?

- Federal regulations have reduced SO₂ emissions in Canada from key sources.
- Canada has agreed to international treaties to reduce SO₂ emissions.
- Canada has established the **Canadian Ambient Air Quality Standards (CAAQS)**. These are health- and environment-based numerical values of outdoor air concentrations of pollutants intended to drive continuous air quality improvement in Canada. The CAAQS, a key element of the Air Quality Management System, were developed through a process steered by the Canadian Council of Ministers of the Environment (CCME).

Pollutant	Averaging Time	CAAQS Numerical Values		Units	Metric
		Effective in 2020	Effective in 2025		
SO ₂	1 hour	70	65	Parts per billion (ppb)	The 3-year average of the annual 99th percentile of the daily-maximum 1-hour average concentrations
	Annual (1 year)	5.0	4.0		The average over a single calendar year of all the 1-hour average concentrations

LEVELS OF SULPHUR DIOXIDE IN OUTDOOR AIR



Levels of SO₂ in outdoor air are higher in certain areas of Canada, such as communities close to some types of industrial facilities and in areas of oil and gas extraction.

More information can be found on the **STATE OF THE AIR** website

<http://airquality-qualifiedelair.ccme.ca/en>

For more information on air pollution, please visit www.canada.ca/en/health-canada/services/air-quality.html or contact us at: HC.air.SC@canada.ca