



# Great Plains Air Zone

## What is smog?

Commonly understood to be a pairing of the words smoke and fog, smog describes a form of air pollution that resembles these two vapours. Smog is a combination of airborne particulate matter like dust, soot and invisible toxic gases, including ozone (O<sub>3</sub>), carbon monoxide (CO), and sulfur dioxide (SO<sub>2</sub>). These elements can cause cancer.

Smog is commonly found in industrial areas and larger cities and can have a significant impact on respiratory health. Smog is unhealthy for humans, animals, and vegetation alike. It can be highly toxic and cause severe sickness, shortened life, or even death. Smog can irritate your eyes, nose, and throat. In more severe cases it can worsen existing heart and lung problems, and is often linked to lung cancer.

Smog is not only very dangerous, but also incredibly ugly. It dulls the world around it with the dingy hue of contaminated air and can even make the sky appear brown or gray depending on the severity. A city draped in a blanket of smog can appear bleak and lifeless. The two most common types of smog are photochemical and sulfurous. Although both describe similar forms of air pollutions, their chemical makeup differs significantly.

Photochemical smog occurs when sunlight reacts with nitrogen oxides and at least one other volatile organic compound (VOC) in the atmosphere. Nitrogen oxides are derived from things like car exhaust, coal power plants and factory emissions. VOCs on the other hand are released from compounds like gasoline, paints and many cleaning solvents.

Sulfurous smog (also known as London Smog) often results from the use of fossil fuels containing sulfur like natural gas, coal, and crude oil. When these chemicals are hit by sunlight, a reaction occurs that forms airborne particles and ground-level ozone – or smog. There are typically higher levels of smog in the summer due to more sunlight exposure and higher temperatures.

Health risks associated with the inhalation of smog are why many cities and municipalities have started to monitor air quality levels. Many countries have even created laws with the intention of reducing emissions. Some of these laws include restrictions on what chemicals a factory can release into the atmosphere, or when the factory can release them.

Great Plains Air Zone (GPAZ) serves as the air-monitoring service in Southern Saskatchewan. The goal in all provincial/territorial Air Management Zones (AMZs) is to continuously improve air quality, and to alert citizens when that air quality presents a risk.

You can help reduce smog by changing a few behaviours of your own like avoiding the use of gas-powered vehicles, ensuring proper maintenance is done on any vehicles being used, avoiding products that release high levels of VOCs, and fueling up during the cooler hours of the day to prevent gas fumes from heating up and producing ozone.