

Particulate Matter Air Pollution

Air quality is measured by the level of pollutants in the air. Factors that affect air quality include the types and amount of pollutants released into the air. Weather conditions can also effect how quickly pollutants are released in the air, such as wind speed, precipitation, temperature, and local topography, such as local mountains.

Air quality can vary greatly from one location to the next and from one hour to the next. The levels of certain key air pollutants are measured continually at monitoring stations around the province.

What is particulate matter air pollution?

Particulate matter (PM), or particle pollution, refers to very small particles in the air that we breathe. Particulate matter air pollution can cause a variety of health problems.

Particle pollution is made up of different substances, including carbon, sulphur and nitrogen compounds metals, and soil or dust particles. These particles come in different shapes and sizes and can be either solid or liquid particles.

Particle size is usually measured in units of one millionth of a metre – a micron. PM10 refers to particles that are 10 micrometers or smaller in diameter. This is about one-eighth the diameter of a human hair.

PM10 includes coarse particles that range in size from 2.5-10 micrometers in diameter. Fine particles, which have diameters less than 2.5

micrometers (PM2.5) are most closely linked to serious health effects. Fine particles can be inhaled more deeply into the lungs, where they are slow to clear.

What causes particle pollution?

Any form of burning can lead to particle pollution.

One of the largest sources of particulate matter in B.C. is residential wood burning. Wood smoke may come from sources such as a fireplace or woodstove within a home, slash burning, or beehive burners.

Other sources of particulate matter include diesel vehicles, industry, road dust, building incinerators, furnaces and tobacco. The harmful effects of tobacco smoke are already well known, and within B.C. many municipalities have already placed restrictions on tobacco smoking in public places.

How dangerous is particle pollution?

Particulate matter is considered to be the air pollutant of greatest concern to human health within B.C. Research has shown that even low levels of particulate matter can lead to increased deaths, emergency room visits, hospital stays, and days lost from work or school.

Children and older adults are most likely to be affected by this type of air pollution. As well, premature death can occur in those with heart or lung diseases.

How can I reduce levels of particulate matter?

You can reduce the levels of particulate matter in the following ways:

Reduce the amount of smoke.

- Stop smoking indoors or in outdoor areas around other people.
- Garden refuse should be mulched instead of burned.
- Limit use of fireplaces and woodstoves and make sure that they are burning wood properly. Wood that is well seasoned instead of wet or “green” should be used. As well, stoves should meet CSA or EPA emission standards. Pellet stoves produce even less particulate matter.

Reduce vehicle emissions and increase fuel efficiency.

- Diesel vehicles such as buses and trucks are an important source of fine particles. Reduce diesel emissions by replacing older engines with newer and cleaner engines.
- Retrofit existing engines with particulate filters or diesel oxidation catalysts.
- Switch to cleaner fuels such as ultra-low sulphur diesel fuel, biodiesel or natural gas.
- Make sure your tires are properly inflated. Under-inflated tires can be a safety hazard and can increase the amount of fuel you use.
- For short trips try walking, bicycling, car-pooling, or public transit.
- Pay attention to any recommended maintenance schedules for your vehicle.

For more information

For more information about particulate matter in your area, contact your local Ministry of Environment office, or visit the following Web sites:

B.C. Ministry of Environment

www.env.gov.bc.ca/air/particulates/fpwtaah.html

B.C. Lung Association

www.bc.lung.ca/airquality/airquality_publications.html



BC Centre for Disease Control
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

For more BC HealthFile topics visit
www.bchealthguide.org/healthfiles/index.stm
, or visit your local public health unit.

Call the BC NurseLine to speak to a registered nurse, available 24-hours every day:

- In Greater Vancouver, call 604-215-4700
- In BC, call toll-free 1-866-215-4700
- Deaf and hearing-impaired, call 1-866-889-4700
- Pharmacist available 5pm to 9am every day
- Translation services in over 130 languages upon request.

Visit BC HealthGuide OnLine – a world of health information you can trust at
www.bchealthguide.org/