

Wildfire Smoke

OHS information for workers and employers

KEY INFORMATION

- Wildfire smoke is a hazard that can impact workers anywhere in Alberta
- Outdoor workers doing strenuous work close to the source are most exposed
- Hazardous substances in the air are typically below occupational exposure limits

THE HAZARD: What is wildfire smoke?

Wildfire smoke is a common, seasonal health hazard in Alberta during the spring, summer and autumn months. The hazardous ingredients of smoke include particulate matter, carbon monoxide, and chemicals such as, aldehydes, polycyclic aromatic hydrocarbons and benzene.

THE EFFECTS: What are potential health effects of exposure?

The health effects can range from eye, nose and throat irritation to reduced lung function, bronchitis, exacerbation of asthmas and even risk of death.

- Particulate matter exposure may result in irritated eyes, increased mucous production in the nose or throat, and/or coughing or difficulty breathing, especially during strenuous work. People with existing respiratory or cardiovascular conditions may experience aggravation of these health effects.
- Carbon monoxide exposure may happen to anyone close to a fire. Symptoms of carbon monoxide exposure may include headache, weakness, dizziness, confusion and visual impairment. Prolonged or high exposures may result in coma and death. Firefighters and people with cardiovascular disease are at an increased risk.
- Chemicals contained in the smoke such as formaldehyde, polycyclic aromatic hydrocarbons or benzene, can irritate eyes and the respiratory system, and may trigger asthma. They may also increase cancer risk over a lifetime.

Working When There is Wildfire Smoke

THE EXPOSURE: How am I exposed?

Outdoor workers in close proximity to the source and those performing strenuous activities are most exposed, however, workers in any number of jobs may be exposed to wildfire smoke.

THE RISKS: Am I at risk?

While outdoor air may appear smoky, the amount of hazardous substances in the air are typically far below occupational exposure limits (OELs) found in the Alberta Occupational Health and Safety Code (Schedule 1, Table 2).

Workers in close proximity to the source of the wildfire smoke, or those whose health is compromised (i.e. sensitive worker populations), are at the greatest risk. Even though levels of hazardous substances in locations distant from the source are likely below the OELs, these exposures may still pose a health hazard to some workers. At risk workers should follow the [health advisories as posted by Alberta Health Services](#).

Sensitive populations

- Outdoor workers required to perform strenuous activity
- Workers with existing respiratory conditions – such as asthma, lung cancer, chronic obstructive lung disease (COPD) including chronic bronchitis and emphysema
- Workers who smoke with compromised lung function
- Workers with existing cardiovascular conditions including angina, previous heart attack, congestive heart failure, or irregular heartbeat
- Elderly workers, due to deteriorating respiratory, cardiovascular and immune system function
- Pregnant workers
- Diabetic workers, as they may have underlying conditions such as cardiovascular disease

THE CONTROLS: What can I do for protection?

Eliminating or preventing exposure is the best way to protect health. When employers cannot eliminate the hazard, they should assess the hazard, evaluate the hazard controls available and outline how they will control potential worker exposure using the hierarchy of controls.

Hierarchy of Controls

Options that should be considered include the following, listed in preference based on the hierarchy of controls:

- Elimination and substitution
- Engineering controls
- Administrative controls
- Personal protective equipment (PPE)

Working When There is Wildfire Smoke

The plan should involve workers and:

- identify workers at increased risk of exposure;
- outline the signs and symptoms of exposure to smoke;
- explain the hazards to workers;
- outline what to do if a worker shows adverse symptoms suspected of being a result of smoke inhalation; and,
- identify training requirements for the administrative and personal protective equipment controls chosen to mitigate the hazard.

Administrative controls

- If your work is not critical and can be moved to an area where smoke levels are lower, consider relocating or rescheduling it when air quality conditions improve
- Reduce levels of physical activity, as necessary, to decrease inhaling pollutants
- Pay attention to warnings - public health warnings apply to you and should be followed
- Don't smoke tobacco and stay away from people who smoke
- When in your vehicle, keep the windows closed - the air system should be set on recirculate so smoky air doesn't get inside
- When driving through an area with low or no smoke, let outside air into your vehicle
- Drink water and stay hydrated to help ensure your nose and mouth are moist
- If you have chest tightness, chest pain, or shortness of breath, call 9-1-1 or go to the nearest emergency department right away
- If you have unusual tiredness, contact a community health nurse or your doctor - do this even if you don't have a heart or lung problem
- If you have an emergency, call 9-1-1 or for general health information, call Health Link at 8-1-1.

Personal protective equipment

- When administrative controls are unable to reduce exposures to acceptable levels, respiratory equipment may be used and must be selected in accordance with the Canadian Standard Association Standard z94.4-02, Selection, Use and Care of Respirators.

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Contact Us

OHS Contact Centre

Edmonton & Surrounding area

- 780-415-8690

Throughout Alberta

- 1-866-415-8690

Deaf or hearing impaired:

- 780-427-9999 (Edmonton)
- 1-800-232-7215 (Alberta)

Website

work.alberta.ca/ohs-contact-us

Get Copies of OHS Act, Regulation and Code

Alberta Queen's Printer

www.qp.gov.ab.ca

Occupational Health and Safety

work.alberta.ca/ohs-legislation

FOR MORE INFORMATION:

- Alberta Health Services – Health Advisories;
<http://www.albertahealthservices.ca/news/Page1926.aspx>
- Alberta Environment and Sustainable Resource Development – Air Quality Technical Map;
<http://maps.srd.alberta.ca/AQHI/>
- Respiratory Protective Equipment: An Employer's Guide
http://work.alberta.ca/documents/WHS-PUB_ppe001.pdf
- Hazard Assessment and Control: a handbook for Alberta employers and workers
<http://work.alberta.ca/documents/ohs-best-practices-BP018.pdf>
- Carbon Monoxide at the Work Site
http://work.alberta.ca/documents/WHS-PUB_ch031.pdf

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