

How Workplace Chemicals Can Harm You

What is a respectful workplace?

Many thousands of chemicals are used in Manitoba workplaces. They can be the raw materials used to make a product or they may be the product itself. Other chemicals are used during the work process for purposes such as cleaning or lubrication. Still others are byproducts of an industrial process.

Chemicals take several different forms. They can be solids, liquids, vapours, gases, dusts, fumes or mists. We commonly think of chemicals as being liquids, like acids, solvents and oils, or gases, like carbon monoxide or oxygen. However, metals, such as lead and nickel, or minerals, such as asbestos and silica, are also chemicals.

Many chemicals can make you sick. Some can make you sick right away or within a few hours of being exposed to them. One chemical might give you a headache and loss of co-ordination; another might make your eyes sting. Some chemicals can cause loss of consciousness or even death. Certain chemicals make you sick only after many years of exposure. For example these chemicals might give you cancer, kidney disease or nerve damage. Whether you get sick depends on such factors as:

- If the chemical can get into your body
- How much of the chemical you are in contact with
- How long you are in contact with the chemical
- How poisonous the chemical is

A chemical can get into your body in three main ways:

*It can be breathed
It can go through your skin
It can be swallowed*

Substances that can harm the lungs

- ❖ Asbestos
- ❖ Silica
- ❖ Welding fumes
- ❖ Toluene Diisocyanatos

Substances that can harm the brain and nervous system

- ❖ Organic Solvents
- ❖ Lead
- ❖ Organic Mercury
- ❖ Carbon Monoxide
- ❖ Manganese

Substances that can harm the kidney

- ❖ Lead
- ❖ Cadmium
- ❖ Arsenic

Substances that can harm the reproductive system

- ❖ Lead
- ❖ Some Organic Solvents
- ❖ Pesticides

Substances that can harm the liver

- ❖ Arsenic
- ❖ Trichloroethylene
- ❖ Perchloroethylene
- ❖ Dimethylformamide
- ❖ Other Organic Solvents

Every breathe you take

The most common way for workplace chemicals to get into your body is for you to breathe them in. For this to happen, a chemical must be in the air as a dust, vapour, gas, or mist.

Your nasal passages and the lining of large airways capture large particles and prevent them from being inhaled. These particles are removed when you blow your nose, cough, or sneeze or swallow mucus that has moved out of the airways. However, particles that cannot be seen with the naked eye are generally more capable of getting into your lungs.

Once in the lungs, some chemicals will stay there and cause harm. They can scar and irritate the lung tissue, create excess phlegm, narrow the airways, and cause cancer.

Some inhaled chemicals cause little damage to the lungs, but pass into the bloodstream and damage other parts of the body.

More than skin deep

The skin is a good protective shield for the body. It produces oil to help maintain the skin's moisture. If the oil is removed, for example by a degreaser, the skin will be a poorer barrier against germs and chemicals. Wounds or scratches can have the same effect. Once absorbed, chemicals can pass into the bloodstream and damage other body organs.

Chemicals can also cause direct damage to the skin such as irritation, burns, allergic reactions and skin cancer.

Gut reaction

The other main way that workplace chemicals can get into your body is by being swallowed. Your food can be contaminated by the chemicals you work with if you do not wash your hands before eating or if you eat in your work area. Smoking or chewing gum can also carry chemicals into your mouth. You can also swallow chemical particles caught in the mucus your lungs are trying to clear out.

Swallowing workplace chemicals, even in tiny amounts, can be harmful. Digestive juices and the liver can help to break chemicals down into less harmful substances. Even so, it is still possible for

chemicals that are swallowed to harm you.

Not created equal

Not all chemicals harm all parts of the body. Nor do all chemicals usually go into the body by all routes. Also, chemicals differ from one another in the amount it may take to cause harm.

People are rarely exposed to just one chemical at work. Certain chemicals may work together in the body and the effect of each adds up. Sometimes chemicals which may have a limited impact on your body if you are exposed to them one at a time can have a serious impact if you are exposed to them at the same time.

There are still many chemicals for which we do not know all the possible health effects. In these cases, the best policy is to view them as potentially harmful until their health effects are fully known.

What can you do?

- Find out about the chemicals you work with. Ask about the Globally Harmonized System (GHS) in your workplace.
- Insist on appropriate measures to control chemical hazards such as:
 - ✓ using a less toxic chemical instead of a more toxic one
 - ✓ improving local exhaust ventilation
 - ✓ using personal protective equipment such as gloves or respirators as needed
 - ✓ using proper procedures for handling chemicals.
- Wear personal protective equipment, when it is provided.

If you need more information on a particular chemical, you can visit the following websites which contain detailed information on thousands of chemicals used in the workplace.

www.scorecard.org/chemical-profiles
<https://web.doh.nj.gov/rtkhsfs/indexfs.aspx>

For more information

Occupational Health Centre
167 Sherbrook St.
Winnipeg, Manitoba Phone: 204-949-0811
Email: info@ohcmb.ca
Website: ohcmb.ca