

## Chemical air pollution in your home

This fact sheet was completed by Healthy Indoor Environment in November 2023. Any kind of copying, distribution and other use is highly desirable and can be done freely with source acknowledgement. As our knowledge bank is constantly updated, you should check regularly for a newer version at: [www.healthyindoorenvironment.org](http://www.healthyindoorenvironment.org)

### Pollution sources

In our home, air pollution of health-hazardous character from chemicals typically comes from three sources:

- 1) Chemicals that are released from products, fixtures, materials, etc.
- 2) Chemicals formed by combustion processes in the home.
- 3) Pollution from outdoor air.

Chemical air pollution can quickly disperse throughout the home. Therefore, it is important to always keep the doors closed to the room where pollution is generated, e.g., the kitchen when cooking, the living room with candles and wood burning, or the workroom when chemicals such as glue, turpentine, impregnation spray, etc. are used. Always carry out work with harmful chemicals in places with good ventilation - preferably outdoors.

Harmful chemicals in the indoor air can cause problems such as headaches, but can also increase the risk of cancer, allergies, and other serious diseases. Not all chemicals are harmful or occur in harmful concentrations. If you or your children develop allergies, chemicals can trigger allergic reactions even in small concentrations. The safest is therefore to avoid harmful chemicals in the indoor environment altogether. Young children, pregnant women and people with allergies are particularly sensitive to harmful chemicals.

### 1) Release of chemicals

Chemicals can evaporate as gases from cleaning agents, paint, varnish, cleaning liquids (turpentine, acetone, etc.), furniture, building materials, etc. It can, for example, be PCB, formaldehyde, toluene, etc. Likewise, chemicals can adhere to the microscopic particles that are released through wear and tear of furniture. Some chemicals from furniture, air fresheners, toys, or scented candles you clearly smell, while others you do not smell at all. Odourless chemicals are not necessarily less harmful than the chemicals we can smell.

The best thing is to avoid products that pollute the indoor environment with chemicals, e.g., air fresheners, scented candles, etc. Instead, remove what is causing the bad smell in your home. You should also avoid buying toys, nappies, etc. that contain scented substances. Finally, you can to a high degree avoid harmful chemicals in products by buying products with the Nordic ecolabel *The Swan* and the allergy label from asthma societies. You should always buy water-based products and products without hazard labels, if available.

Some polluting products can be used outdoors (and left to evaporate outdoors after use) e.g., glue, nail polish remover, stain remover, means for coating and caring for clothes, shoes, etc. If you cannot use the product outdoors, open all windows in the room while using the product - remember to turn off the radiator in the meantime - or use the product under the cooker hood on the highest setting with the kitchen door closed. Switch on the cooker hood 5 minutes before using the product and let it run for 10 minutes more after you finish. In general, you should avoid spray products.

The general chemical load of your indoor air can be reduced by aerating with through draught (opening all windows) for 5 minutes 3-5 times a day (once before you go to bed) - remember to turn off the radiators in the

meantime to minimise heat loss. You should turn off electronics at the main switch when not in use (hot electronics can release harmful chemicals). Finally, cleaning removes dust that contain chemicals.

Air purifiers are generally bad at removing free chemicals in the air but can effectively remove chemicals on dust particles or particles in the air - the best, however, is to avoid health-hazardous chemicals altogether rather than cleaning the air. Read more here: <https://godtindeklima.nu/wp-content/uploads/2023/12/air-purifiers-capability-to-reduce-exposure-to-pollution-generated-in-private-homes-med-appendix.pdf>

## **2) Formation of chemicals**

In addition to particles that are formed during combustion processes from smoking, wood burning, candles and cooking, several harmful chemical substances are also formed and released into the air in your home. Pollution can be avoided or limited with the precautions described in the fact sheet *Particle pollution in your home*.

## **3) Pollution from outdoor air**

The outdoor air can contain harmful gases from road traffic, wood burning, diesel trains, cruise ships, etc., that are close to the home. This can significantly pollute the indoor air when the windows are open, or if your home has mechanical ventilation that sucks in the pollution. Sealed, new windows are tight and often keep pollution out.

If you live next to a trafficked road, keep the windows facing the road closed during rush hour. Keep the windows closed if the outdoor air smells like wood smoke or smoke from diesel trains, cruise ships etc. If your windows are not tight, replace the windows or buy and install sealing strips from your local hardware store.

If you have mechanical ventilation: Filters in your mechanical ventilation do not remove gases. That requires an activated carbon filter, which you can consider installing if your ventilation system is compatible and you live close to a trafficked road, or you often smell wood smoke or diesel exhaust in the air entering your ventilation system. Change the filters when the air from the mechanical ventilation starts smelling like pollution again.

Talk to your neighbour about a good solution if you smell the neighbour's wood smoke. If that does not help, or if the outdoor air or the air entering your ventilation system smells like diesel fuel, wood smoke, slurry, etc., then file a complaint to the municipality.

Air purifiers are generally bad at removing chemicals - read more in the link further above.

**More on indoor air pollution and solutions:**

[www.healthyindoorenvironment.org](http://www.healthyindoorenvironment.org)