

Chemical air pollution at your workplace

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Pollution sources

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

- 1) Chemicals that are released from products, equipment, materials, etc.
- 2) Chemicals formed by combustion and production processes.
- 3) Pollution from outdoor air.

Chemical air pollution can quickly disperse throughout the workplace. Therefore, it is important to always keep the doors closed to the room(s) where pollution is generated e.g., production rooms/workrooms where 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, hormonal disorders, and other serious diseases. Not all chemicals are harmful or occur in harmful concentrations. If employees develop allergies, chemicals can trigger allergic reactions even in small concentrations. The safest is therefore to avoid that employees are exposed to harmful chemicals in the workplace. Pregnant women and people with allergies are particularly sensitive to harmful chemicals.

If employees are often exposed to high concentrations of harmful chemicals, then a chemical risk assessment must be made in addition to the workplace risk assessment - especially if the chemicals are carcinogenic.

If you suspect chemical air pollution in the workplace, then you should have an investigation made - if there is pollution, what sources of pollution there are, and which solutions can effectively reduce the pollution. We are happy to help. Contact Head of secretariat Kaare Press-Kristensen: kaare@godtindeklima.nu / tel. 22 81 10 27.

1) Release of chemicals

Chemicals can evaporate as gases from cleaning agents, paint, varnish, cleaning liquids (turpentine, acetone, etc.), equipment, products, 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. Some chemicals you clearly smell, while others you do not smell at all. Odourless chemicals are not necessarily less harmful than the chemicals we can smell.

Harmful chemicals can to a certain extent be avoided by using products with the Nordic ecolabel and the allergy label from asthma societies. If possible, use water-based products and products without hazard labels. Spray products should be avoided if protective equipment is not used.

The general chemical load of the indoor air can be reduced by aerating with a draught (opening all windows) for 5 minutes 3-5 times a day (unless the ambient air is polluted) - remember to turn off the radiators meanwhile to avoid heat loss. Electronics should be turned off at the main switch when not in use (hot electronics can release harmful chemicals). Finally, frequent and thorough cleaning can remove dust that contains 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 at your workplace 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 the particles that are formed during combustion processes – e.g., in boilers or diesel engines, and from candles and cooking – several harmful chemical substances are also formed and released into the air. In addition to any combustion processes in the workplace, chemicals can also be formed and released during other production processes. Pollution can be avoided or limited with the precautions described in the fact sheet: *Particle pollution at your workplace*.

3) Pollution from the outdoor air

Pollution from road traffic, chimneys, exhausts, diesel trains, cruise ships, etc., in workplaces can significantly pollute the indoor air when windows and doors are open, or if the workplace has mechanical ventilation that sucks the pollution into the building. Newer windows and doors are usually sealed and keep pollution out when closed.

Keep windows and doors closed if you smell smoke, diesel fume or other pollution outside. If the windows are not tight, replace the windows or buy and install sealing strips.

If the workplace has mechanical ventilation, replace the filter with a better filter (HEPA or EPA filters) and, if necessary, install an activated carbon filter in the ventilation system, if it is technically possible. Note that the filters must be changed regularly. Change the carbon filter in the ventilation inlet when the smell of pollution reappears.

If the pollution originates from neighbouring businesses, start a dialogue to find a good solution. If this does not help, or if the air in the intake from the ventilation system smells like smoke, diesel fumes, slurry, etc. then contact the municipality.

Have measurements made

We can help with measurements and assessments of the indoor environment, and solution options to get a better indoor environment. Contact the Head of secretariat Kaare Press-Kristensen: kaare@godtindeklima.nu / tel. (+45) 22 81 10 27.

More on indoor air pollution and solutions:
www.healthyindoorenvironment.org