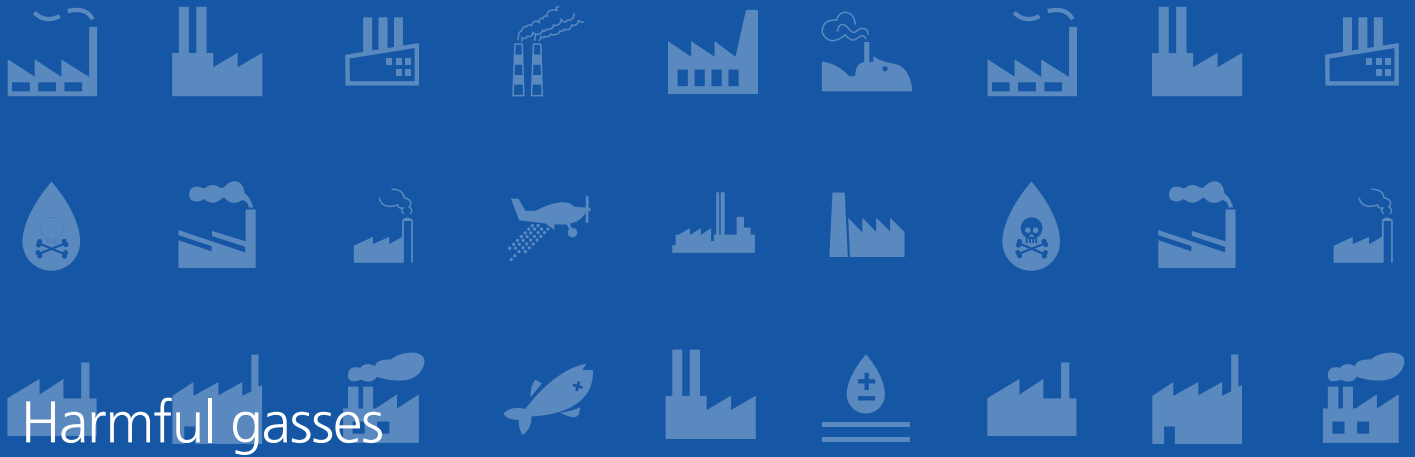




# Polluted air contains more than just small particles

*The quality of air in the Netherlands affects the air quality inside buildings, especially in industrial areas with a lot of traffic. This air pollution can cause acute and chronic health complaints. Air pollution can be divided in two categories: Particulate matter (dust particles), and gasses (ozone, nitrogen dioxide, benzene, etc.). Only with adequate ventilation using the correct filters can potential problems be prevented.*

*All forms of air pollution are detrimental to health. That is especially true for particulate matter. The bigger floating particles - those larger than a few thousandth of a millimeter - fall to the ground, but the smaller particles stay afloat. Those particles consist of metals like copper, zinc, soot, asbestos and pesticides. Because of their small size they are easily inhaled. If that happens, there is a chance these particles enter the circulatory system through the lungs. Therefore the risk of serious health problems like myocardial infarction rises, especially for people of poor health.*



## Harmful gasses

Just like particulate matter, the otherwise harmless gas ozone can cause problems too. Ozone easily reacts with other contaminants in air, and can also react with certain solid materials. In these reactions the ozone disappears but other contaminants are formed, like formaldehyde. These agents can cause inflammation in the lungs and hinder oxygen intake. Other gas contaminants like benzene, toluene and nitrogen dioxide also need ventilation. These gasses can react with air which causes a decrease in oxygen levels, with acute problems like dizziness and eventually nausea.

## Ventilation is necessary

Most of the contaminants are difficult to release from buildings. In theory a building should have the same air quality inside as outside. In practice, air quality inside is much worse than outside as there a lot of polluting factors inside. Some of these factors are human breath, the use of solvents, cleaning products, spray cans, etc. Most people notice little of these contaminations. Some may smell something, or find the building to be stuffy. Others might experience headache. Even though these symptoms might seem minor, it is important to take precautions. A poor working environment means serious health risks, especially for people of poor health.

The concentration of most contaminates can be reduced by filtering air before being vented into the building. It is important to carefully consider what type of filter is needed. Usually a new HEPA filter (F7) is installed. A bad choice, as these filters can be compared to vacuum cleaner bags. They only filter the relatively big particles. However, ultrafine particulates and gaseous pollution like benzene, toluene and nitrogen dioxide pass straight through the filter.

## The right filter

For filtering out both harmful gasses and all particulates there are combination filters available. These are equipped with a particulate filter and a gas filter. These filters cost as much as HEPA filters and fit in all prevailing ventilation equipment. These combined filters keep all external pollution like gasses and particulates out, making sure the indoor environment stays unaffected by any contaminants outside.