

CARING ABOUT YOUR INDOOR AIR QUALITY

Q1. WHY IS INDOOR AIR QUALITY IMPORTANT?

Because we spend so much of our time indoors (up to 90% according to Building Efficiency / Green Building) it is important that indoor air be free of harmful toxins. EPA - United States Environmental Protection Agency - found levels of about a dozen common organic pollutants to be 5 to 10 times higher inside homes than outside, regardless of whether the homes were located in rural or highly industrial areas. Their studies indicated that while people are using products containing organic chemicals, they can expose themselves and others to very high pollutant levels. Additionally, elevated concentrations can persist in the air long after product usage or activity is completed (for example: varnishing furniture, using paint strippers, installing carpet or resilient flooring, etc).

Q2. WHAT ARE THE MOST COMMON HOUSEHOLD AIR CONTAMINANTS?

Nitrogen dioxide, acetaldehyde and formaldehydes are the most common household air contaminants.

Nitrogen dioxide (NO₂) is one of a group of highly reactive gasses known as "oxides of nitrogen," or "nitrogen oxides (NO_x)." Other nitrogen oxides include nitrous acid and nitric acid. Environmental Protection Agency's (EPA) National Ambient Air Quality Standard uses NO₂ as the indicator for the larger group of nitrogen oxides. NO₂ forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO₂ is linked with a number of adverse effects on the respiratory system.

Acetaldehyde is a widespread air contaminant that can be found in many household products. It is used in the production of fragrances (perfumes), flavours, pesticides, dyes, synthetic rubbers, disinfectants, lacquers and varnishes, photographic chemicals and room air deodorizers. It is also created as a result of cigarettes combustion. It is known to cause respiratory and eye irritation and in severe cases, pulmonary edema. It also exacerbates the effects of alcohol and is a central nervous system depressant.

Formaldehyde is one of the most well known and most toxic indoor air contaminant, sadly due to its abundance in common consumer products. It is used primarily in the production of chemical intermediates for adhesives found in the wood products, pulp & paper and synthetic vitreous fibre industries. It therefore can be found in especially high, sometimes alarming, concentrations in new residential constructions due to the relatively recent fabrication of the wood-based panels used for construction elements, cabinetry, furniture and so on. It is also used as a germicide, insecticide and fungicide. Other sources of formaldehyde include vehicle exhaust, off-gassing from formaldehyde-containing products as well as combustion from kerosene heaters, wood stoves and cigarette smoke. Epidemiological studies demonstrated strong evidence that it causes nasopharyngeal cancer in human, strong but not sufficient evidence that it causes leukemia as well as limited evidence that it causes sinonasal cancer. It is considered by the International Agency for Research on Cancer (IARC) as a Group I carcinogen.