

# VOC EMISSIONS REDUCTION

## INDOOR AIR QUALITY

When we talk about air quality, we usually think about preserving nature and preventing outdoor air pollution. However, indoor air quality is equally important, especially considering how much time we spend indoors. Children, the chronically ill, and the elderly members of the household are particularly sensitive to the presence of air pollutants. The quality of the air we breathe inside the house largely depends on ourselves.

Indoor air contains all external pollution, but also everything that we “add” to our air such as cooking, evaporation of cleaning, refreshing and disinfecting agents, but also those released from freshly painted walls, new furniture, mattresses or carpets, as well as clothing which we have just brought from dry cleaning.

### What are volatile organic compounds (VOC)?

Volatile organic compounds (VOCs) are a group of organic compounds that evaporate from liquid and solid substances already at room temperature. There are more than 10,000 of them, most of which are responsible for the characteristic smells in the room. They are used in numerous industrial processes and activities, but also in everyday life. Examples of those substances are formaldehyde, benzene, toluene and xylene.

VOCs are found in almost every room of our home. Studies have demonstrated that while using or storing products containing these chemicals, people can expose themselves and others to very high levels of these compounds, and increased concentrations can remain in the air for a very long time. Concentration of VOCs inside homes can be 2 to 5 times higher than outside, and sometimes these values are much higher. This is especially worrying because in some parts of the year we spend as much as 90% of our time indoors.

### Where can we find VOCs?

From bathroom cleaning to lighting scented candles in the living room, numerous VOCs are “hidden” in our homes. Cleaning agents, furniture maintenance, degreasing and disinfection products contain VOCs and the only way to avoid feeling their harmful effects is to follow the instructions, ventilate the premises during and after use, and thoroughly rinse the treated surfaces. In addition to these, bathrooms can also contain odour neutralizing or refreshing agents, the use of which should be kept to a minimum. There are also detergents, fabric softeners and fragrances which we should only use in accordance with the manufacturer's instructions and thoroughly rinse out from clothes. Nail polishes, hair sprays, as well as almost all fragrant substances, also affect air quality in the bathroom, which is almost as a rule the least ventilated room. Learn the meaning of these pictograms!



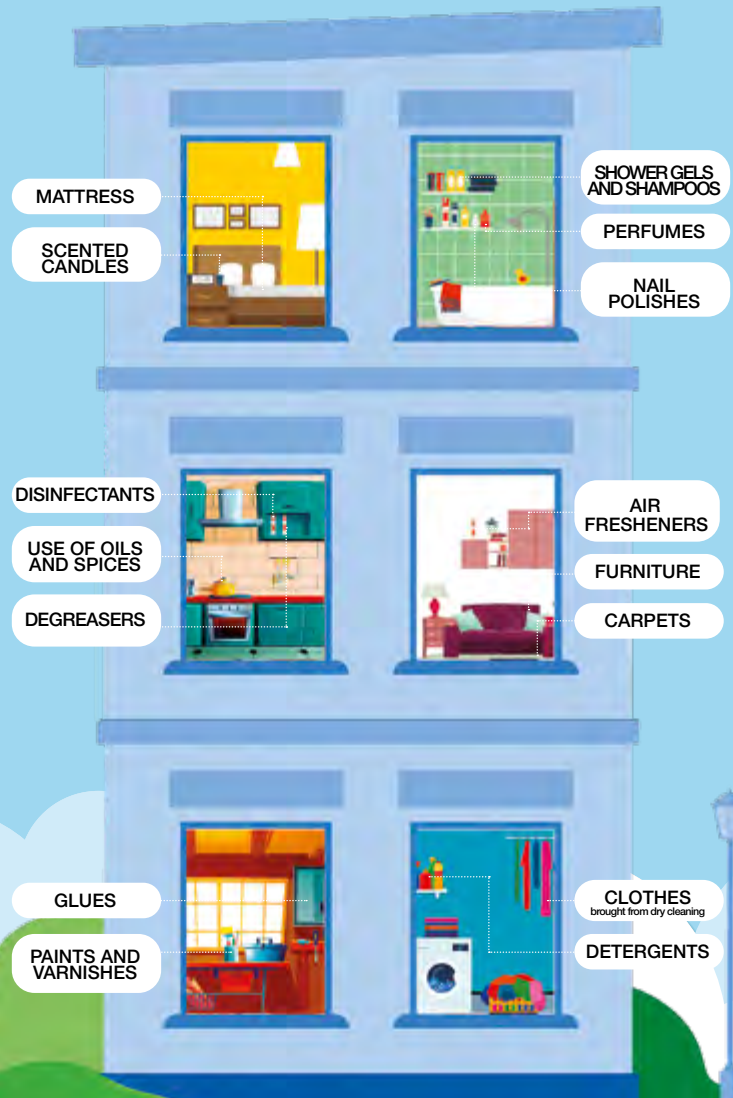
A new flat or a new car has that characteristic smell that arouses satisfaction due to a significant purchase. Unfortunately, this is a “cocktail” of VOCs and their odour should be persistently ventilated. This similarly refers to new mattresses, furniture and carpets, because they often contain flame retardants in addition to glues, which also emit VOCs. Persistent ventilation, if possible before the first use, is a solution, as well as purchase of eco-labelled products. Storage rooms and basements where we keep paints, thinners, glues, bleaches, insecticides, repellents and similar chemicals should be ventilated and the packaging should be kept tightly closed. Kitchen smells from frying and various spices are inevitable, but try to release them out of the room.

## How can we reduce VOC concentrations inside the houses?

- Regularly ventilate all rooms where you spend time, especially during and after the use of cleaning or disinfecting agents.
- Choose odourless cleaning products whenever you can, or look for environmentally friendly alternatives to common cleaning and washing agents. Where there is a smell, there are certainly some VOCs!
- Limit the use of air fresheners and turn to plant species such as lavender, because not only will they bring beautiful scents into your home, but will also do a useful job of purifying indoor air from VOCs, such as formaldehyde. Houseplants are the most effective VOC purifiers.
- Limit or completely avoid the use of all types of cigarettes inside your home.
- Rinse all chemically treated surfaces thoroughly as VOCs will continue to evaporate from the cleaned surfaces.
- Renovate your home when the house is empty or during the season, which will allow you to open doors and windows to increase ventilation.
- Wash clothes before wearing them for the first time, but also thoroughly rinse the detergents and fabric softeners after washing.
- Dry the washed laundry outside whenever you can, otherwise thoroughly ventilate the room where the laundry is dried.
- Remove the plastic bag from the clothes you brought from the dry cleaner and leave it outside to ventilate.

## How VOCs influence human health?

Protracted exposure to high concentrations of VOCs indoors, at home, at work or in the gym, can cause fatigue, headaches, dizziness, skin and eye irritation, but also problems with the functioning of the respiratory organs and nervous system. Effects on human health can be short-term, but can also cause irreversible damage. Some studies show that in large cities, a significant contribution of VOC emissions comes from everyday household activities.



The eVOC Serbia Project is being implemented thanks to the support of the Royal Norwegian Embassy in Belgrade, with the aim of achieving environmental standards in the field of volatile organic compounds emissions. The Project supports the Ministry of Environmental Protection of the Republic of Serbia and the Serbian Environmental Protection Agency in transposing the chapter of the Industrial Emissions Directive pertaining to operators and activities that use organic solvents and provides full support to operators in Serbia, especially small and medium-sized enterprises by strengthening their capacities.



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