# Safe as houses

Consumers are exposed to harmful chemicals in their homes every day. We take a look at some sources of these hazards and at how the negative effects can be minimised.

AT A **GLANCE**

**Sources and risks.**

**Toxin-free home checklist.**

You may not realise it, but many seemingly harmless products which are found in people's homes are sources of harmful chemicals which give rise to indoor air pollution. Activities in the home, such as cooking, heating and smoking, also contribute to the level of pollutants indoors. The Environmental Protection Agency (UK) has warned that indoor pollution is a serious health risk, estimating that the air indoors could be up to five times more polluted than the air outside.

According to BEUC, the European Consumer Organisation of which the CAI is a member, Europeans spend an average of 85-90% of their time indoors and reductions in ventilation rates (to limit energy consumption) and extensive use of new building materials are leading to the release of chemical substances with unknown toxic properties. Tobacco smoke, asbestos, radon and benzene released inside buildings are prime suspects in the increase in cancer cases in the EU, and up to 20% of Europeans suffer from asthma due to substances inhaled indoors.

Although *Consumer Choice* has previously looked at the risks posed by chemicals in some cleaning products (see 'Green Cleaning', June 2009, p225), there are other potential dangers which we feel consumers should be made more aware of. Whether you are moving into a new home, considering redecorating or simply worried about the negative impact of indoor air pollution, we have a checklist of what to look out for to help you to reduce your household's exposure to harmful chemicals. We also have some advice on where you can find safer alternatives.

## Sources and risks

It is only to be expected that there will always be a certain level of air pollutants in your home. However, because we have such a cool climate in Ireland, many of us spend the majority of our time indoors with the doors and windows shut. We simply may not be aware of the need to address indoor air contaminants. Some of these are produced naturally but most are from man-made substances. In smaller amounts they may

not be classed as a pollutant. You may not notice the effect they have because exposure is likely to be low. However, the problems can manifest over long periods of time.

If you smoke in your home, you should also be aware of the dangers. Cigarette smoke is an indoor air pollutant - around 4,500 chemicals, including nicotine and benzene, are released into the air with every cigarette. Likewise, poorly maintained or malfunctioning gas ranges, stoves, heaters and fireplaces release fumes and are at risk of emitting other pollutants such as carbon monoxide or sulphur dioxide. Other air pollutants include mould, fungi, mildew and dust mites which can be introduced into the home by humans and pets. These thrive in areas where moisture is present.

Upholstery, furnishings, carpets, rugs, furniture, paints, adhesives, solvents and chemical cleaning agents are also risk factors for indoor pollution. These can emit Volatile Organic Compounds or VOCs, a group of individual organic chemicals that add to indoor air pollution and which some health experts believe are harmful to our health. Examples of VOCs are formaldehyde, benzene, ammonia, methane, phenols, smoke, asbestos, and radon. The associated health conditions and illnesses include asthma, nausea, skin rashes, respiration problems and fatigue. People who are at an increased risk of developing symptoms from poor indoor air quality levels include those who are already suffering from existing respiratory conditions, pregnant women, children and the elderly.

## Toxic sofas

According to a recent *Sunday Times* report, Argos and other retailers are compensating Irish customers for amounts of up €50,000 after a number of people developed burn-like rashes and blisters dubbed 'toxic sofa syndrome' from a chemical used to protect sofas during shipping and storage. Hundreds of people in the UK have been affected by skin allergies, rashes and burns from the sofas which were manufactured by Linkwise and Eurosofa. The UK customers affected by the chemical in question have brought a group action against the retailers Argos, Walmsley and Land of Leather.

In 2007, doctors in the UK and Finland found that sachets of fungicide crystals placed in Chinese-made sofas to stop the fabric from getting damp were to blame for the problem. If the chemical dimethyl fumarate (DMF), is exposed to heat, it can release toxic gas that irritates the skin. The EU has now banned the use of the chemical, which has previously been used in numerous imported leather goods. The problem has not been highlighted as extensively in Ireland as it has been in the UK so consumers suffering from rashes and skin complaints may be unaware that their couch could be to blame.

Consumers should note that it is possible to suffer from dermatitis up to several years after first contact with the sofas has been made. If you suspect that you or any family member is suffering from skin problems for this reason, make sure to ask your doctor to arrange the necessary tests.

## Paint

Most interior paints release chemicals, including colorants, pigments, binding elements, and solvents into the air in homes. The chemicals which can be found in conventional paints include formaldehyde, glycol ether, benzene and phenol. Even after a petroleum-based paint dries, it can emit VOCs for many years following application. Eco-friendly paints reduce or eliminate the use of VOCs. Such paints often incorporate plant dyes and minerals. Clay paint, for example, is made from minerals and water but the colour selection for clay paints may be limited, and if the walls painted with them get dirty they must be repainted rather than washed. Although, it is safer to use water based and latex paints, a reduction in VOCs may mean higher levels of alternative chemical components are used.

Stoneware Studios based in Cork (see *Useful contacts*) is the national distributor for the Earthborn range of paints and decoration products in Ireland. Earthborn is a range of eco paints and natural varnishes which includes VOC free paint, organic paint and varnish, water-based paint, and water-based varnish. The range is Ireland's only paint accredited with the EcoLabel meaning it meets the strict environmental and performance criteria of the EU ecolabelling scheme.

## Lead

Heavy metals such as lead, mercury, cadium, zinc, chromium and arsenic can be hazardous to health even at a small dose level. According to the European Food Safety Authority (EFSA, see *Useful contacts*), lead is an environmental contaminant that occurs naturally and, to a greater extent, from activities such as mining, smelting and battery manufacturing. The metal occurs in organic and inorganic forms, with the latter predominating in the environment. Control measures have been taken to regulate lead in paint, petrol, food cans and pipes in Europe since the 1970s. Many homes which were built before the 1970s contained lead in the paint and the plumbing pipes. If your home was built before that period, consider replacing any lead pipes and always run the cold tap for a few minutes before using the water for drinking or cooking as lead leaches into water when left sitting.

## Bedroom materials

There are a number of alterative materials available which may be beneficial to individuals who suffer from allergies, asthma and other respiratory conditions.

Look out for natural fibres such as wool, cotton, linen and silk for curtains, carpets and furnishings instead of synthetics, and look for furniture made from solid timber instead of plastics and particle board which contain formaldehyde. Bamboo is an option for allergy-sufferers as it is antibacterial and dust-mite resistant. Bamboo is also renewable and biodegradable. Bamboo bedding is available from www.betweenthesheets.co.uk. If somebody in your household suffers from eczema, it may be worth considering derma-therapy bedding made of fibres which keep the skin cool and dry, and prevent irritation and infection. Pillow cases from €39.99 for two and sheets from €55 are available from www.anhealth.co.uk.

## More ways to reduce the toxic load of your home

There is a growing awareness of the dangers posed by some of the materials people are taking into their homes and, once consumers know what to watch out for, there are steps that can be taken to minimise the effects of indoor toxic air. It would be impossible to remove all allergens in your home but you can limit your exposure by following this advice. If you do have any unexplained allergic symptoms, consult with your doctor for

**Useful websites**

**European Food Safety Authority**
www.efsa.europa.eu

www.ecofriendlypaints.ie

www.stonewarestudios.com/natpaints.html

www.jumbletown.ie

www.freecycle.org

www.gumtree.ie

www.donedeal.ie

www.ecoshop.ie

www.greenme.ie

www.ecoshakti.com

www.cultivate.ie

www.valoearth.ie

www.healthbuild.com

professional medical advice.

## Furnishing your home

When buying new fixtures and fittings, look for options made from natural products or with non-toxic and non-chemical additives. Shopping and researching online for second-hand products will help to cut out some of the cost, as will refurbishing, reusing and recycling when possible.

## Green cleaning

Use non-toxic and non-chemical cleaning agents, paints, solvents, adhesives and pesticides whenever possible. Although some eco products may be expensive, they should be made with high quality materials that have a long lifespan so the costs are spread over a longer period of time. Be careful when choosing products and materials that claim to be eco-friendly, and look out for manufacturers displaying the EcoLabel. A recent report by UK consumer group Which? found that some companies that are marketing their products as environmentally friendly are exaggerating the green claims they are using to sell 'eco' products. A total of 14 household items including laundry tablets, toilet cleaners and nappies were examined by a panel of experts. The conclusion was that more than half the manufacturers of the products examined did not provide enough scientific evidence to back up their eco claims.

## Pet allergies

Some allergens are caused by animal hairs or particles of animal waste. To limit effects, wash and groom your pet regularly, and clean and wash pet litter trays, water and food bowls every day.

## Plants

Introduce plants to as many rooms in your house as possible, because house plants such as spider plants, Boston ferns, elephant ear philodendron, ivy and aloe vera help to absorb chemicals from the atmosphere.

## Radon alert

Radon is a naturally occurring radioactive gas that comes from the decay of uranium, which is found in all rocks and soils. When radon surfaces in the open air, it is quickly diluted to harmless concentrations, but when it enters an enclosed space, such as a house or other building, it can sometimes accumulate to dangerously high concentrations. Householders can have a radon measurement carried out by the RPII or another radon measurement service (see 'Radon Risk', *Consumer Choice*, Nov 2009 p430 ).

## Spring cleaning

Keeping your home dust and dirt-free is important at all times of the year and not just during the spring season! Wash or dust all solid surfaces including floors, walls, table tops, worktops, furniture, window ledges and mantel pieces regularly. Frequent vacuum cleaning will also help to reduce levels of indoor air pollutants. When cleaning clothes, choose steam dry cleaning services rather than chemical dry cleaning when possible.

## Ventilation

Open the windows at the front and back of your house for a period of time every day to create a flow of air. Ventilation is often restricted in modern homes, leading to airborne pollutants becoming concentrated in the air. Regularly check that heating, ventilation and air conditioning systems are functioning correctly and remember to replace filters when necessary.

### TOXIN-FREE HOME CHECKLIST

**Read through our toxin-free home checklist below to find out how you can minimise your household's exposure to harmful chemicals:**

**Avoid:**
- Upholstery and furniture treated with stain repellents and brominated flame retardants.
- Carpets and curtains containing stain repellents and brominated flame retardants.
- PVC and polycarbonate plastic bottles and containers (labelled #3 and 7).
- Microwaving food in plastic wrap.
- Detergent/fabric softener with synthetic fragrances.
- Products with toxic chemicals and high levels of VOCs (paints, varnishes, paint stripper, glue, adhesives and solvents.
- Non-stick pans for cooking.
- Mattresses with brominated flame retardants, plastic or foam.

**Look for:**
- Furniture without stain repellents or brominated flame retardants.
- Natural fibre carpets and curtains.
- Glass containers, BPA-free babies' bottles (see 'Plastic fantastic?', *Consumer Choice*, June 2009 p222).
- Glass containers or plastic containers labelled microwave safe.
- Fragrance-free detergent/fabric softener.
- Water-based and plant-oil based products and those with low levels of VOCs.
- Cast iron and stainless steel pans.
- Mattresses with cotton stuffing or cotton padding around the foam core.

*Report by Sinéad Mc Mahon* CC

## choice comment

Indoor pollution can pose a serious health risk. The CAI, along with BEUC, believes that consumers need more information about indoor air pollution and how to minimise the problem in their daily lives. BEUC has previously said "Enough research has been undertaken to identify the most problematic compounds in indoor air pollution and sources of emissions. We urge the European Commission to come up with a Green Paper containing proposals for ambitious action to address this public health concern."

BEUC and the CAI are of the view that a precautionary approach is needed. This would involve, for example, proposing the application of maximum emission levels for emission sources such as consumer products, or systematically assessing the risks for vulnerable groups.

Reference values for indoor air pollutants' concentration should be developed and common to all European countries. Minimum requirements, including emission limit values, should be imposed on industry for consumer products, such as cleaning products, space deodorising products, cosmetics and furniture. Product emissions need to be taken into account in the design process.

Awareness raising programmes are necessary for health professionals and consumers. A new chemicals system in Europe called REACH became law in 2007 and this gives European consumers the 'right to know' about the most harmful chemicals in products (see 'Green Cleaning', *Consumer Choice*, June 2009, p225).