

Treat sofas like electronic waste, say scientists

July 31 2014, by Alex Peel



Waste from soft furnishings like curtains, cushions and sofas should be discarded with the same caution as electronics, say scientists.

Both types of waste contain brominated flame retardants (BFRs), which have been shown to damage the environment and human health. In the UK, at least two thirds of [electronic waste](#) – or e-waste – has to be treated before it can enter [landfill](#). But furniture waste isn't currently regulated.

UK households dispose of almost a million tonnes of furniture and textiles each year, the vast majority of which ends up in landfill. The rest is incinerated.

Scientists are concerned that this is adding to a reservoir of [harmful](#)

[chemicals](#) which might eventually leach into groundwater, contaminating water supplies and spreading to the wider environment – BFRs have already been detected in water from landfill sites.

A new review led by William Stubbings at the University of Birmingham calls for urgent research into those risks. In the meantime, it says, furniture waste should be regulated in the same way as e-waste.

'Until now most of the focus has been on e-waste,' says Stubbings. 'I think this is just because there is so much of it and we go through it so quickly, but many of the same risks apply with furniture and textiles.'

'We're building up enormous reservoirs of these chemicals in landfill, which could create problems for us in the future. It makes sense to at least try to minimise it.'

Widespread BFR contamination of air, water, and soils has been documented by a number of academic studies. People are mostly exposed to the chemicals through dust in buildings and food.

The chemicals disturb the human endocrine system, responsible for regulating the amount of different hormones released into the blood stream.

Two separate studies carried out over several years in New York and California tested the effects of exposure to the chemicals in the womb on childhood development.

In the New York study, exposure was associated with lower mental and physical development test scores for children aged one, four and six. In California, children aged five and seven demonstrated poorer attention, fine motor skills and brain function.

Many BFRs are now banned for use in new products throughout the EU and North America. But as recently as 2005, their total annual usage stood at an estimated 311,000 tonnes and, since the early 90s, millions of tonnes have entered the market.

Much of this has already found its way into landfill. To avoid further build-up of the chemicals, the scientists are calling for the remaining BFR-laden waste to be 'destroyed or managed in an environmentally sound manner.' They also emphasise the need to maintain and monitor landfill sites long after they've been closed.

Stubbings' PhD research, funded by NERC, will further investigate the potential of BFRs to leak out of existing landfill sites, and the potential risks this could pose to people and the environment.

The review is published in the journal *Environment International*.

More information: William A. Stubbings and Stuart Harrad, 'Extent and mechanisms of brominated flame retardant emissions from waste soft furnishings and fabrics: A critical review', *Environment International*, 2014, [DOI: 10.1016/j.envint.2014.06.007](https://doi.org/10.1016/j.envint.2014.06.007).

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