

Persistent organic pollutants

POPs can have widely differing chemical structures and properties. Some POPs may be individual chemicals while others occur as groups of closely-related compounds, sometimes referred to as 'congeners'.

POPs share several common properties:

- persistence – POPs are very stable and can remain in the environment for many years - this includes air, water, soil and sediment
- toxicity – at certain levels, POPs can have harmful effects on organisms, including mammals, fish and/or invertebrates
- bioaccumulation – POPs have the capacity to build up in organisms, including mammals, birds and fish

When sufficient scientific evidence is available, POPs are listed in the Stockholm Convention, an international agreement to control or eliminate the occurrence, production and use of these chemicals. The first twelve chemicals listed were older pesticides, for example DDT, Dieldrin and Aldrin, although the list also included polychlorinated biphenyls (PCBs) and dioxins, which are formed through high temperature and uncontrolled combustion.

There are regular reviews of other chemicals or chemical groups for potential listing under the Stockholm Convention. In recent years, we have seen the addition of brominated flame retardants (BFRs), perfluorooctane sulphonate (PFOS), polychlorinated naphthalenes (PCNs) and short-chain chlorinated paraffins (SCCPs).

Food safety

Because of their properties, POPs are often present in food, especially food of animal origin such as meat or fish. This is normally at insignificant levels but there is the possibility that they may reach levels potentially harmful to consumers, particularly as the result of an incident such as feed contamination. Two costly incidents involving dioxins occurred in the last twenty years.

Where there is a greater likelihood of contamination, regulatory limits may be established. These limits are based on what is considered the normal range for a particular commodity such as fish, lamb, poultry or eggs.

The limits have two main purposes:

- when a food sample has a test result above the limit - even if it is not a concern for health - this suggests that there may be an unusual source of contamination that requires investigation
- when there is an incident with a lot of contaminated food, having regulatory limits makes it simple for the enforcement authorities to have the contaminated food removed from the market

It is difficult for food businesses to control the levels of POPs in their products and the harmful effects from POPs normally only occur through high exposure over a long time. For POPs, there are maximum limits only for dioxins and PCBs. These are set out in Regulation [1881/2006](#).

These limits are reviewed when new information on occurrence and toxicity becomes available.

Food businesses that wish to have their products tested for dioxins and PCBs should be aware of Regulation [2017/644](#), which establishes the criteria for sampling and analysis. The laboratory conducting the analysis should, as a minimum, meet the analytical criteria set out.

For other POPs, such as BFRs and perfluorinated chemicals, the collection of data on levels in food is coordinated by the European Food Safety Authority (EFSA) which, when sufficient information is available, will provide a risk assessment. It is then up to the European Commission, together with Member States, to decide whether limits in food are necessary to protect public health.

Industry guidance

There is formal guidance for the food industry regarding dioxins and PCBs. The Codex Alimentarius Commission published a document in 2006 setting out some principles for dioxins and PCBs.

[Code of practice for the prevention and reduction of dioxin and dioxin-like PCB contamination in foods and feeds](#)