

In the 1970s, man-made polychlorinated biphenyls (PCBs) were banned as ubiquitous and poorly degradable compounds in open applications. Today, it is a new class of compounds, the **per- and polyfluorinated alkylated substances** (*abbr.:* PFAS), which are known to be globally widespread, persistent and bioaccumulative.

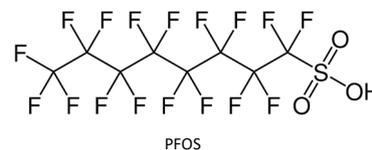
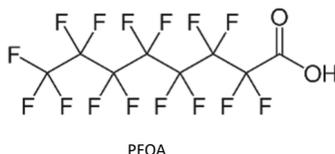
Many thousands of substances belong to the PFAS; these have water-, oil-, grease- and dirt-repellent properties, they are therefore colloquially called "Super-Pril". Since they are difficult to degrade in the environment and in the human body, they are also called "for ever chemicals". PFASs are still used today in outdoor fabrics, in the paper, carpet and leather industries, in fire extinguishers, cleaners, polishes and many other technical applications. The polymer macromolecule is e.g. polytetrafluoroethylene (PTFE), better known as Teflon®.

In addition to the two main representatives, perfluorooctanoic acid PFOA and perfluorooctanesulfonic acid PFOS, perfluorononanoic acid PFNA and perfluorohexanesulfonic acid PFHxS are considered to be the four lead substances for which limit values for animal products (Regulation (EC) No. 1881/2006, valid since 01.01.2023) and so-called **indicative levels** for plant products have been derived on the basis of toxicological findings.

According to Commission Recommendation (EU) 2022/1431, these *indicative levels* are to be understood as **guideline values**, above which an investigation into the origin of the contamination should be initiated: *"These levels should not affect the possibility of placing a food on the market, but investigations should be carried out if the PFAS concentration in a food exceeds these levels"*.

For fruit, vegetables (except wild mushrooms) and starchy roots and tubers, the following *indicative levels* apply:

- PFOS: 0,010µg/kg
- PFOA: 0,010µg/kg
- PFNA: 0,005µg/kg
- PFHxS: 0,015µg/kg



The 4 lead components are analysed in our laboratory according to an accredited in-house method after complex extraction by LC-MS/MS. Our current determination limits are 0.005µg/kg per component and meet the requirements of the review. In addition to the four lead components, we can also test 30 other PFAS that are not relevant for assessment.

When taking samples, it must be taken into account that samplers do not wear clothing or gloves that have a fluoropolymer coating or have been treated with PFAS to increase water and stain resistance (e.g. Gore-tex®). They must not use hand creams, sunscreens or similar products containing PFAS on the day of sampling.

Conclusion:

Per- and polyfluorinated alkyl substances are a class of substances that is ubiquitously present, persistent and bioaccumulative. The concentrations in plant-based foodstuffs are in some cases a factor of 1000 lower than those of pesticide residues. Based on the EU guideline values, we recommend preventive monitoring of fruit and vegetables according to the motto "act instead of react".