

BfR Recommendation on PFAS

As reported many times the perfluoroalkyl substances are considered as a serious concern by the authorities due to their persistence in the environment and suspected negative health impact. A Danish ban is in place since July last year and the EU Chemicals Strategy for Sustainability (CSS) contains - as a key action point - the phasing out of the PFAS substances for non-essential uses. (See FC updates 2020/Q3 and 10/11/20)

In this context it is important to be aware, the German Federal Institute for Risk assessment (BfR) released late June data on the exposure to industrial chemicals including PFAS and reviewed the EFSA health-based guidance values.

<https://bfr.bund.de/cm/343/pfas-in-lebensmitteln-bfr-bestaetigt-kritische-exposition-gegenueber-industriechemikalien.pdf>

In its latest re-evaluation from September 2020, the European Food Safety Authority identified a Tolerable Weekly Intake (TWI) of 4,4 nanograms (ng) per kilogram of body weight per week for the sum of 4 PFAS : perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA) and perfluorohexanesulfonic acid (PFHxS).

The BfR has been assessing the health risk for different population groups in Germany based on the TWI from EFSA and food monitoring data of the federal states. The results of this exposure assessment have been supplemented by studies in three German cities on PFAS concentrations in the blood.

Like EFSA, the BfR comes to the conclusion that parts of the German population are exposed to PFOS, PFOA, PFNA and PFHxS above the TWI, at a level that may be associated with a lower concentration of vaccine antibodies in the blood serum in infants breastfed for a long time in the first years of life. This is also possible in children between 1 and 9 years of age with high PFAS exposure through their diet.

At present the study data are not sufficiently conclusive to answer the question whether there may also be effects for adults and adolescents and the BfR emphasises there are still existing uncertainties related to the exposure estimations.

In view of these findings the BfR recommends measures to further minimise the PFAS intake via food and is currently updating the questions and answers on its website.

Within the ECMA Food Safety Committee it has been well stated this group of chemicals needs to be phased out.

Review FCM legislation

According to the latest presentations by DG Sante officers, the process to review the existing Framework Regulation 1935/2004 is well progressing.

By the end of 2022 the technical documents should be finalised and early 2023 a legislative proposal by the Commission should be ready, with an adoption within the current legislature (2019-2024).

One of the key issues ECMA is monitoring in this process is the risk, related to the suggested increased focus on the compliance of the final article. (See FC update 15/03/21)

Of course, the safety of the final article needs to be assured, taking in account the migration which may come from the different used materials (board, inks, adhesives ...), but this should not lower the responsibility of the upstream suppliers.

Suppliers need, to assess the intentionally used substances and the NIAS, have to indicate which specific substances need to be checked by the downstream users and have to provide accurate use instructions. The converters are responsible for checking what is indicated by the suppliers, have to respect the use instructions and need to manufacture in accordance with GMP.



Helpful is the DOC wording included in the Council of Europe Resolution CM/Res (2020)9 on the safety and quality of materials for contact with food.

Once more:

“Food contact materials and articles under the scope of the resolution are to be accompanied by a declaration of compliance”. A DOC needs to be issued at all stages of the supply chain and means that the manufacturer of the food contact material or article assumes responsibility for the suitability for food contact, including the safety of all released substances, unless he has informed the next business operator in the supply chain further specified compliance work needs to be performed.”

“The FCM manufacturers have to make available information on the substances used, impurities and reaction and degradation products, including those known or foreseen to be generated at later production stages, for which the business operator has identified that further compliance work needs to be conducted at the next stages in the supply chain.”

ECMA has in recent months been invited to give presentations at the Fresenius Conference “Residues of FCM in food” (24-25/06) and the PTS Conference Paper and Board for Food Contact (03-04/03).

This were good occasions to share our position regarding the review of the EU FCM legislation and to present the new ECMA GMP.

Both presentations will be made available (for reuse) via the Members Only section. It may be very valuable to discuss the core messages with national authorities.

PTS Paper & Board for Food Contact conference



A selection of messages on new or not recently covered topics:

Nancy Wolf - TU Dresden.

Influence of relative humidity on the transfer of volatile organic compounds from paper and board to Tenax.

An increasing relative humidity results for direct and indirect contact, in a higher odour intensity and a changed odour profile of paper.

Matthias Reinelt - Fraunhofer (IVV).

Optimisation of packaging with software-based prediction of shelf life.

Many parameters are influencing the shelf life of food: product, microbes, packaging, head space, ambient conditions, the consumer expectations. IVV developed a Shelf-life modelling Tool.

Antje Kersten - TU Darmstadt.

Aluminium release of FCM. Outcome of research work.

Significant sources for the entry of Aluminium in paper production: water soluble aluminium salts (aluminium sulphate...), not water-soluble clay as filler/coating pigment, poly-aluminium chlorides (PACs and related components) as fixing agent.

Higher aluminium migration values are found when using deionized water for testing or when in contact with acidic food. When using drinking water all results for cardboard (coated/uncoated) remained well below 1mg/l.

Lydia Richter - CVUA Stuttgart.

Chloro propanols release from FCM paper. Recent results from an official control laboratory.

Limits set in BfR 36 : 3-MCPD Cold Water Extract CWE < 12 µg/l

1,3-DCP (considered as a genotoxic carcinogen) <LOD 2 µg/l.

13 samples were tested in 2019, 108 in 2020 (muffin tins, cake laces, baking bags, plates and cups...).

For two muffin tins (on 25 samples) 3-MCPD was above the 12 µg/l and 1,3-DCP was detectable.

For the paper plates/cups, in 1 out of 7 samples the 3-MCPD limit was exceeded and 1,3-DCP was detectable.

Farhan Tufail - Halal Certification Services.

Halal production of paper and board - requirements and certification.

Raw materials considered as critical: lacquer coating, dyes and calcium stearate (one of the most common fatty acids. Is more abundant in animal fat).

Halal solutions are required from the packaging manufacturers. Nestlé developed a Halal Policy, mentioning the stearates.

More background is available on demand.



Short overview of some other topics covered in the Food Safety Committee (Q2 2021)

- In the Council of Europe Technical Document for Paper and Board a default value for the surface to volume ratio of 13,3 dm²/kg of food is mentioned. The CoE publication refers to a BfR report from 2015 in which is stated how the ratios for 129 samples taken from the market were ranging from 8 to 137 dm²/kg. In the FS Com it was confirmed the BfR will soon use this same default value, directly related to the cold and hot water extract standards. (EN645 and EN647)
In France the published default value is even 50.
- In the Zero Waste Europe communication, inert materials are presented as safer and more sustainable. (See FC update 19/04)
From the European Paper Packaging Alliance (EPPA) website there is a report available on 'Food hygiene challenges in replacing single use food service ware with reusable food service items'.
<https://www.eppa-eu.org/safety-and-hygiene/report-professor-david-mcdowell.html>
The report states "reuse systems are inherently more complex than single use systems due to multi-location cleaning, sanitation, storage and transport, they lead to greater risks of cross contamination." Well shared via earlier ECMA communication, also an LCA study is available from this same website, comparing single and multi-use.
- A corrigendum to the CEPI/CITPA Food Contact Guidelines was published, including the new limits for aluminium (SML 1mg/kg in food) and BPA (SML 0,05 mg/kg).
<https://citpa-europe.org/sites/default/files/documents/FCG-21-028-Corrigendum-revisions-FCGs-February-2021.pdf>

Selected messages from the attended GFSI conference (23-25/03)



- Trust is the foundation of everything. Rules and trust are necessary. Behind ruling, also a culture of ethical behaviour needs to be present. (Mondelez, Oxford University)
- Food safety is precompetitive "All boats float on the tide. All boats go down with the tide" and from the food industry an example of an intelligence network was mentioned, in which test results are shared in a secured way. (Mars, Agroknow)
- Food safety is not a stand-alone requirement. Food safety needs to go hand in hand with sustainability, availability, social behaviour, ... All this is fitting together. (Tetra Pak, Ferrero)
- Combat misinformation with science-based information. Monitor the truth. Keep track of the changing science. With COVID and related scientific reports all over, there may be new opportunities for science-based communication. (American Frozen Food Institute, Ferrero)
- Big data will have a deep impact in the food safety landscape. There are opportunities related to raw material management, manufacturing/distribution and consumer behaviour. Big data will bring transparency in supply chains. Companies need to know more than their own data! (Mars, Ferrero, PepsiCo)
- Data need to be used for predictive intelligence. Be aware of all data available (internal, boarder refusals, product recalls, ... auditing data available via the auditing companies). (Lloyd's Register)
- Auditing will - in view of the current video experiences - undergo a deep structural change. Human auditing will remain to detect novel problems, but will go hand in hand with continuous customers monitoring. GFSI aims to develop food safety auditing into a well-structured recognised profession. (AGLC, Mondelez)
- Monitoring systems for digital pest management were presented. (Bayer, Orkin)
- Global packaging specifications are introduced to increase the flexibility in supply chains. (Tetra Pak)
- Smart labels showing the real shelf life, contribute to the reduction of food waste. (University Wageningen)

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