New EU rules on food packaging:
BPA (bisphenol A) and
PFAS (per- and polyfluorinated alkyl substances)

25 November,

3 & 4 December 2025

AGRINFO

Today's webinar

Axelle Rupert
EU Policy and Regulations Expert
COLEAD

Andreas Grabitz
Founder
FCMExperts

- Brief introduction to AGRINFO programme
- Part I: PFAS rules (Reg 2025/40)
- Part II: BPA rules (Reg 2024/3190)
  - What are they and how are they used?
  - Why is the EU regulating PFAS and BPA in packaging?
  - New PFAS restrictions and BPA ban
  - New obligations
  - What are the challenges?
  - PFAS strategy and BPA timeline
- Questions and answers

Further questions? e-mail: agrinfo@colead.link

In brief

AGRINFO – www.agrinfo.eu

Funded by the European Union

Towards a fair, healthy and environmentally friendly food system: supporting compliance with EU regulatory and non-regulatory measures

Implemented by COLEAD, a Brussels-based not-for-profit private sector organisation that manages development programmes in the agriculture and food sector (mainly in ACP States) funded by donors, amongst which the EU is the most important.

An open access portal: www.agrinfo.eu that provides up-to-date information on all recent and upcoming changes to EU rules that have an impact on agri-food and fish value chains

While AGRINFO is an EU-funded programme, this presentation does not reflect the views of the European Commission

Why AGRINFO?

Monitor

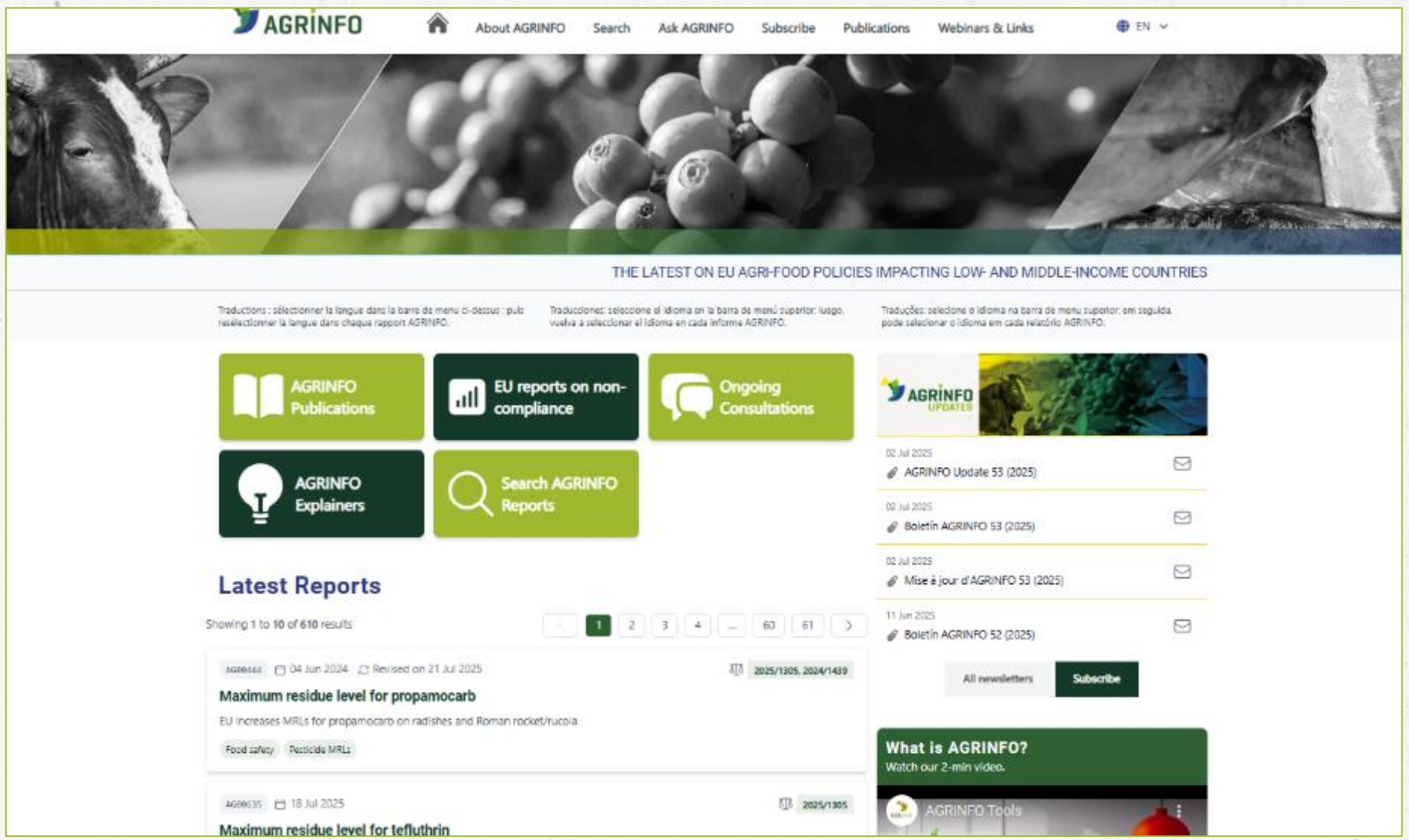
EU introduces approx. 180 new or changes to agri-food rules every year

Consolidate

Simplify

provides clear, accessible explanations of what rules are changing, why and implications

The website www.agrinfo.eu



Regular e-mail updates

Update newsletter circulated every two weeks; subscription is free: https://agrinfo.eu/subscribe

LATEST

New Regulations or policies under development

Sustainability/Due diligence

European Commission launches review of:

- Corporate Sustainability Due Diligence Directive
- Corporate Sustainability Reporting Directive

Common Agricultural Policy

European Commission sets out its Vision for Agriculture and Food for 2025–2029

Read

Common Fisheries Policy

EU and Côte d'Ivoire Fisheries Partnership Agreement – allocation of fishing opportunities

Read

New Regulations coming into force and application dates

Food safety controls

European Commission updates the list of countries that can export animal products to EU. Affected countries: Armenia, Belize, Brazil, Costa Rica, Cuba, Honduras, Kazakhstan, Nigeria, Tanzania, Thailand, Tunisia. Applies from **16 March 2025**

Read

Plant health controls

EU updates frequency rates of import controls for certain plants. Applies from **1 March 2025**

Read

New EU rules on food contact material

This presentation is only on EU requirements for food packaging,
not on the use of PFAS or BPA in food itself (cf. food contaminent legislation)

New EU rules on food contact material

Food Contact Materials (FCMs)

Regulation 1935/2004 applies to all FMC:

- good manufacturing practice (Reg. 2023/2006)
- labelling, advertising & presentation requirements

Specific rules for certain

type of FCMs:

- Plastic (Reg. 10/2011)
- Recycled plastic (Regs. 10/2011 & 2022/1616)
- Active & intelligent materials (Reg. 450/2009)
- Ceramics (Dir. 84/500/EEC)
- Regenerated cellulose film (Dir. 2007/42/EEC)

substance in FCMs:

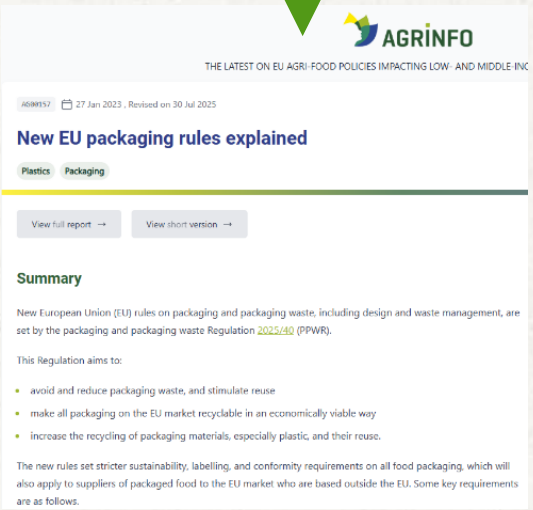
- **BPA & other bisphenols (derivatives)** (Reg. 2024/3190)
- Epoxy derivatives (Reg. 1895/2005/EC)
- Specific substances from rubber teats & soothers (Dir. 93/11/EEC)
- Vinyl chloride monomer (Dir. 78/142/EEC)

Packaging and packaging waste

Packaging and Packaging Waste Regulation (PPWR) 2025/40 with rules on:

- **Sustainability**, **including limits to PFAS**
- Labelling
- Conformity

More information



https://agrinfo.eu/book-of-reports/new-eu-packaging-rules-explained/

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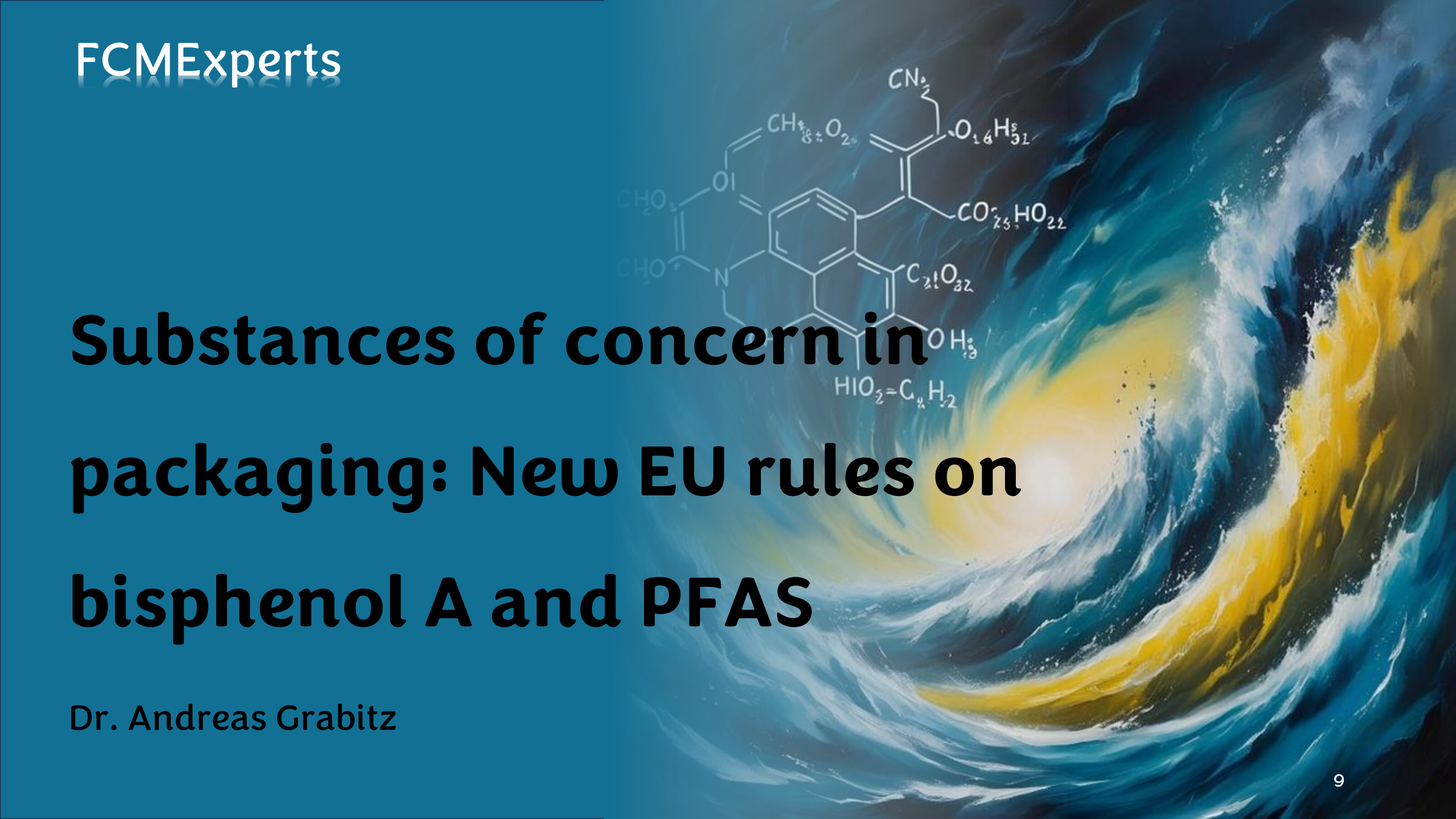

Substances of concern in packaging: New EU rules on bisphenol A and PFAS

Dr. Andreas Grabitz

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Differences between the new EU rules on BPA and PFAS in packaging:

PFAS

Regulation 2025/40

limit on the use of PFAS
from 12 August 2026

BPA

Regulation 2024/3190

general ban of use
from 20 July 2026
(with transitional measure until January 2029)

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I. PFAS rules

EU Regulation 2025/40
(Packaging and Packaging Waste Regulation, PPWR)

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1. What are PFAS and how are they used?

I. Polymers

e.g. Teflon

Extremely inert
Resistent against high temperature
Resistant against fatty food and aggresive acids
Chemically extremely stable – does not degrade

Usually not used in food packaging

NOT in scope of the new legislation

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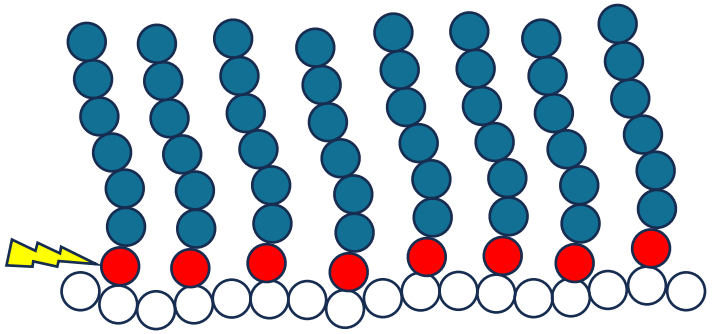
1. What are PFAS and how are they used?

II. Polymers



Water and fat repellants primarily for paper and board
Prone to degradation
Release of small PFAS molecules

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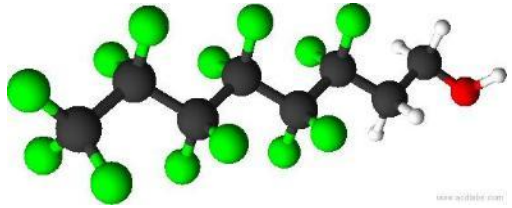
Release of PFAS into food

Table 3
Overview of detected PFAS (with averaged PFAS amounts) in food items and relative potency factors (RPF) used for the conversion into PFOA equivalents (detailed composition of averaged PFAS amounts supporting documents).

Detected PFAS	Popcorn [ng/g food]	Apple Pie	Pirogue	Oatmeal	Chips	Fries	Sugar	Pizza	Muffin	Burger	Butter	Cheese	Potato	Bread	Fish Finger
6:2 DiPAP	0.003	0.002	N.D	0.0002	0.006	0.002	N.A	0.001	0.003	0.004	N.A	N.A	N.A	N.A	N.A
8:2 DiPAP	0.001	N.D	N.D	0.0001	0.004	0.0001	N.A	N.D	0.0001	0.002	N.A	N.A	N.A	N.A	N.A
10:2 DiPAP	0.011	N.D	N.D	0.002	0.035	0.002	N.A	N.D	0.002	0.002	N.A	N.A	N.A	N.A	N.A
S-DiPAP	1833	N.A	N.A	N.A	N.A	N.A	N.A	N.A.	N.A.	N.A.	N.A.	N.A	N.A	N.A	N.A
PFBA	*N.A	N.A	N.A	N.A	N.A	N.A	0.003	0.001	0.002	N.A.	0.005	0.006	0.002	0.001	0.0003
PFPeA	**N.D	N.D	N.D	0.020	0.020	0.020	N.A	N.D	0.020	0.020	N.A	N.A	N.A	N.A	N.A
PFHxA	0.012	N.D	N.D	0.007	0.007	0.007	N.D	0.001	0.002	0.007	0.013	0.017	0.0001	0.0002	0.510
PFHpA	0.003	0.003	0.023	0.002	0.002	0.002	N.A	0.040	0.005	0.003	N.A	N.A	N.A	N.A	N.A
PFOA	0.006	0.009	N.D	0.002	0.0002	0.0002	N.D	0.0004	0.005	0.011	0.031	0.0003	N.D	N.D	0.0003
PFNA	0.0004	0.001	N.D	0.0002	0.0002	0.0002	N.A	0.019	0.005	0.010	0.005	N.A	N.A	N.A	N.A
PFDA	0.001	N.D	0.003	0.0001	0.0001	0.0001	N.A	0.001	0.0001	0.004	0.007	N.A	N.A	N.A	N.A
PFUnDA	N.D	N.D	N.D	0.014	0.014	0.014	N.A	0.004	0.014	0.014	0.008	N.A	N.A	N.A	N.A
PFDoA	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A	0.011	N.A	N.A	N.A	N.A
PFTrDA	N.D	N.D	N.D	0.0002	0.0002	0.001	N.A	0.017	0.0002	0.0002	0.000	N.A	N.A	N.A	N.A
PFOS	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A.	N.A.	N.A.	0.015	N.A	N.A	N.A	N.A
PFDS	N.A	N.A	N.A	N.A	N.A	N.A	N.A	N.A.	N.A.	N.A.	0.006	N.A	N.A	N.A	N.A
6:2 FTOH	N.A	N.A	N.A	N.A	N.A	N.A	0.024	0.225	31.01	1.080	12.89	1.930	3.525	52.89	0.576
8:2 FTOH	N.A	N.A	N.A	N.A	N.A	N.A	N.D	0.204	16.97	1.348	14.47	2.816	16.011	32.20	0.552
10:2 FTOH	N.A	N.A	N.A	N.A	N.A	N.A	0.054	0.087	6.345	1.567	7.40	2.678	17.859	14.58	0.606

* N.A. (not analyzed i.e., was not included in the studies)
** N.D. (not detected i.e., was analyzed but not detected in the samples)

Lerch et. al, Food Pack. Shelf Life, (2023) 35: 100992 ff



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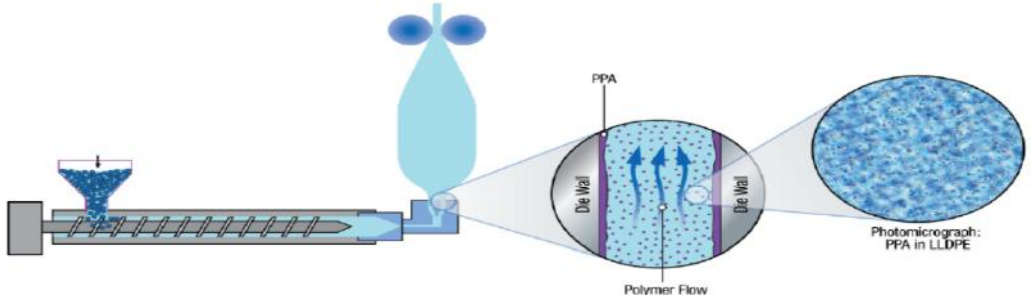
1. What are PFAS and how are they used?

III. Polymers

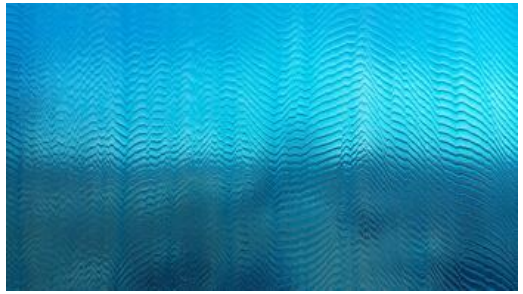


Salakka 2023: Role of PFAS substances in the plastic manufacturing process, Bachelor‘ thesis, Häme University

Mixed Polymer acting as Polymer Production Aids

Added to certain Polyethylene (PE) and Polypropylene (PP) suitable for high temperature applications (baking oven, microwave) to avoid shark shrink and melt fracture

Chemically very stable



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1. What are PFAS and how are they used?

IV. Byproducts of direct fluorination

Bottles and containers made from High-Density Polyethylene (HDPE) show poor barrier properties against gas transfer and against migration

„Bottle collapse“ of unfluorinated HDPE bottles

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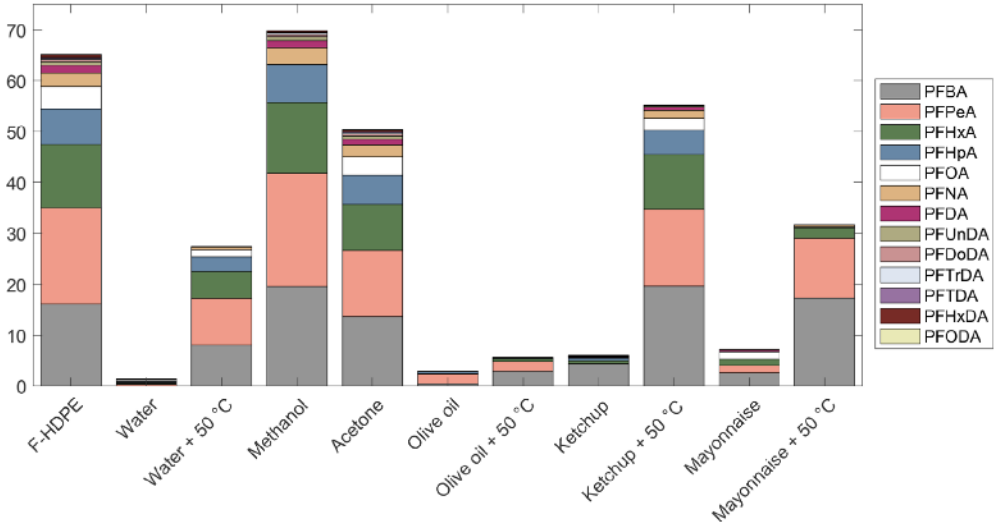
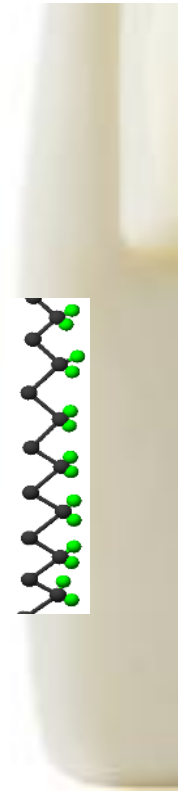
1. What are PFAS and how are they used?

IV. Byproducts of direct fluorination

Injection of elemental fluorine gas into the bottle/container – direct fluorination

Fluorine protective layer is formed on the inner side of the bottle/container improving barrier properties





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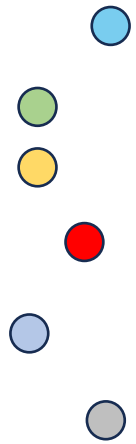
1. What are PFAS and how are they used?

V. Small molecules



e.g.
- PFOA
- PFOS
- PFHxA
- ...

No industrial uses (at least in food and food contact industries)

Occur as break down products or impurities

Often extremely stable in the environment

Often of a certain toxicological relevance

National Institute of Environmental Health Sciences (2025) 15 000 Substances

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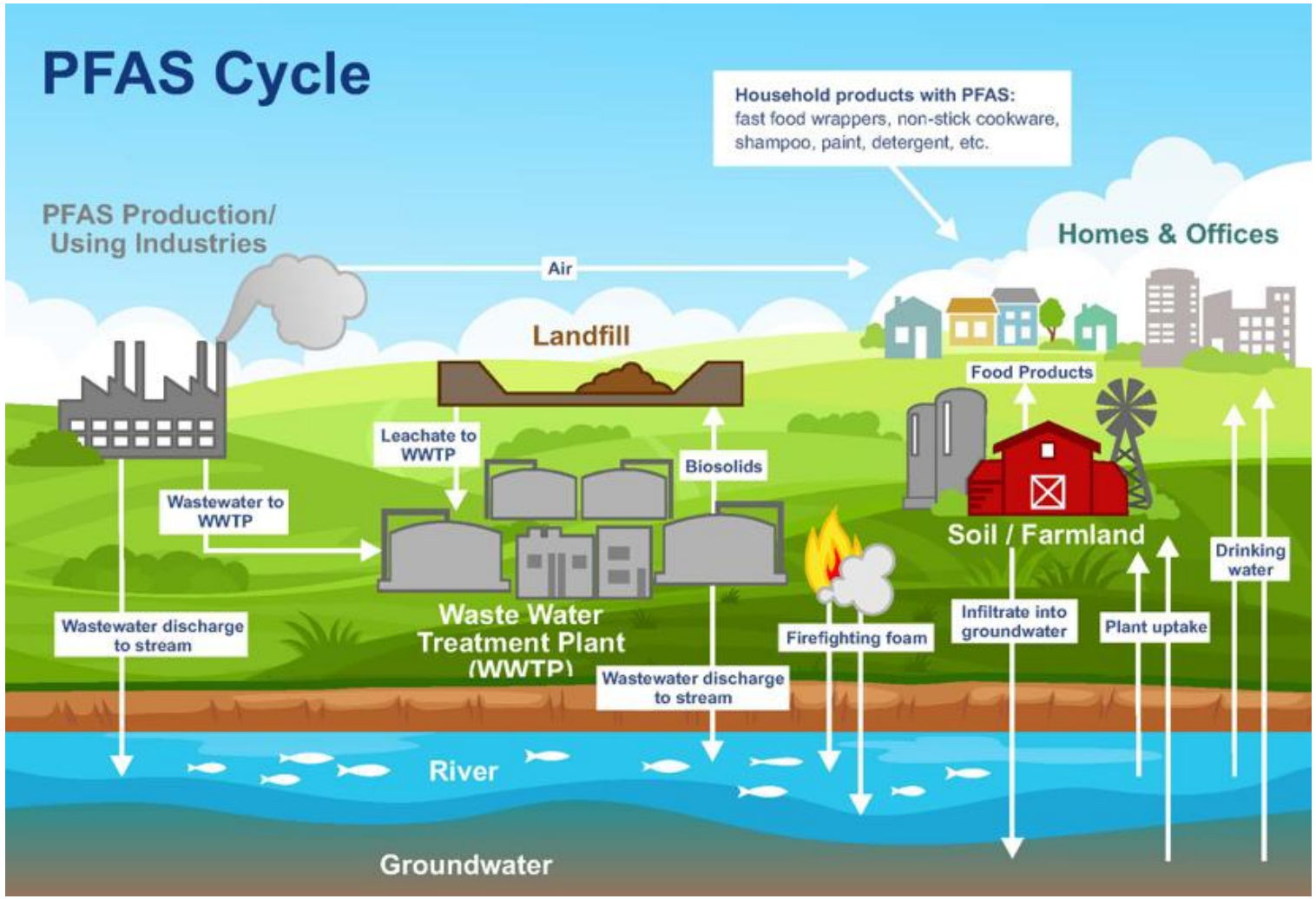
2. Why is the EU regulating PFAS in packaging?

- PFAS are extremely persistent in the environment
- PFAS are found in ground and drinking water, agricultural soils and lots of food stuff
- PFAS are also found in remote areas like the arctic regions, in the middle of the oceans and in all air compartments ever investigated
- Specifically smaller PFAS are of toxicological concern
- Regulation in PPWR is just the 1st step. EU rules for chemicals will follow



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3. New PFAS restrictions

PPWR (EU) No. 2025/40

Article 5 – Requirements for substances in packaging

As of 12 August 2026 **content** of PFAS will be limited (not specific migration)

< 25 ppb for any single PFAS

< 250 ppb for the sum of each of those PFAS

< 50 ppm for total fluorine

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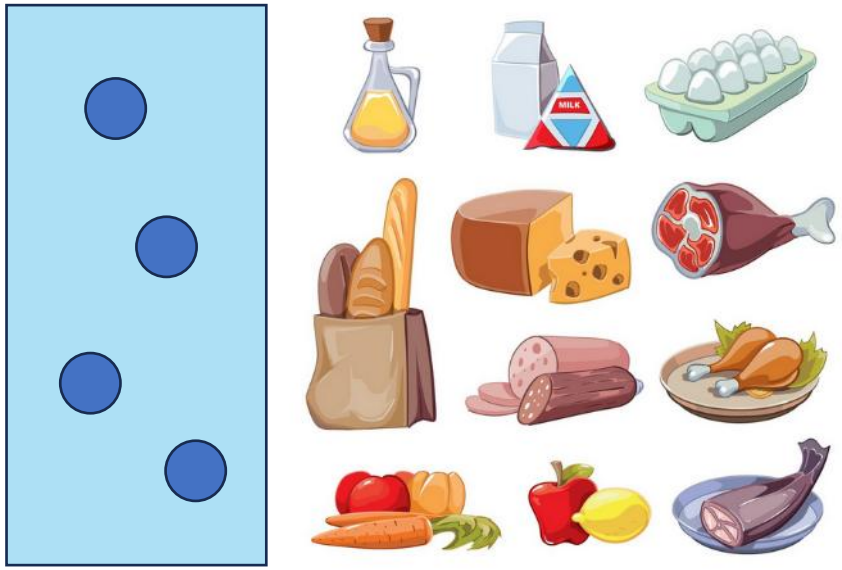
3. New PFAS restrictions



Basic question:
How much of this substance transferred into food is safe for health of consumers?
Specific migration limit (SML) based on hazard of a substance.

Specific Migration

Specific migration limit
Bisphenol A: 1 µg/kg
DEHP: 0,6 mg/kg
…

New approach for PFAS:
The total amount present in a food packaging is restricted!
No human health hazard considered.

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3. New PFAS restrictions

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< 25 ppb for any **single** PFAS **AND**

< 250 ppb for the sum of each of those PFAS **AND**

< 50 ppm for **total fluorine**

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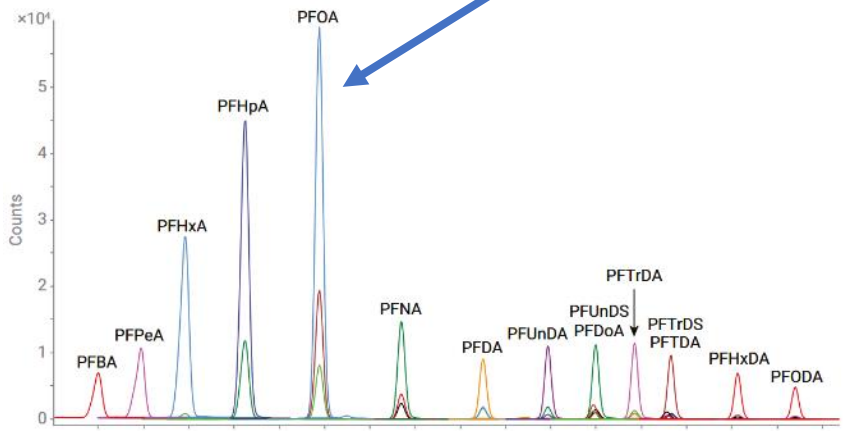
4. New obligations: PFAS analysis (single substances)

What is this Peak?

How much is it?



Prerequesite: Availability of analytical standards to develop and validate methods!

For around 600 out of > 15 000 chemicals analytical standards are commercially available!

Some labs offer around 100 or even more substances per test but most between 30 and 60 substances

Some overlap for most critical substances as PFOA, PFOS etc. but beyond that large variations in scope of labs

https://www.agilent.com/en/product/liquid-chromatography-mass-spectrometry-lc-ms/lc-ms-instruments/triple-quadrupole-lc-ms/6475-triple-quadrupole-lc-ms#zoomELIBRARY_1206540

From Packaging to Plate: FPAS and Food Safety. Expert Insights, Agilent Trusted Answers, 2024.

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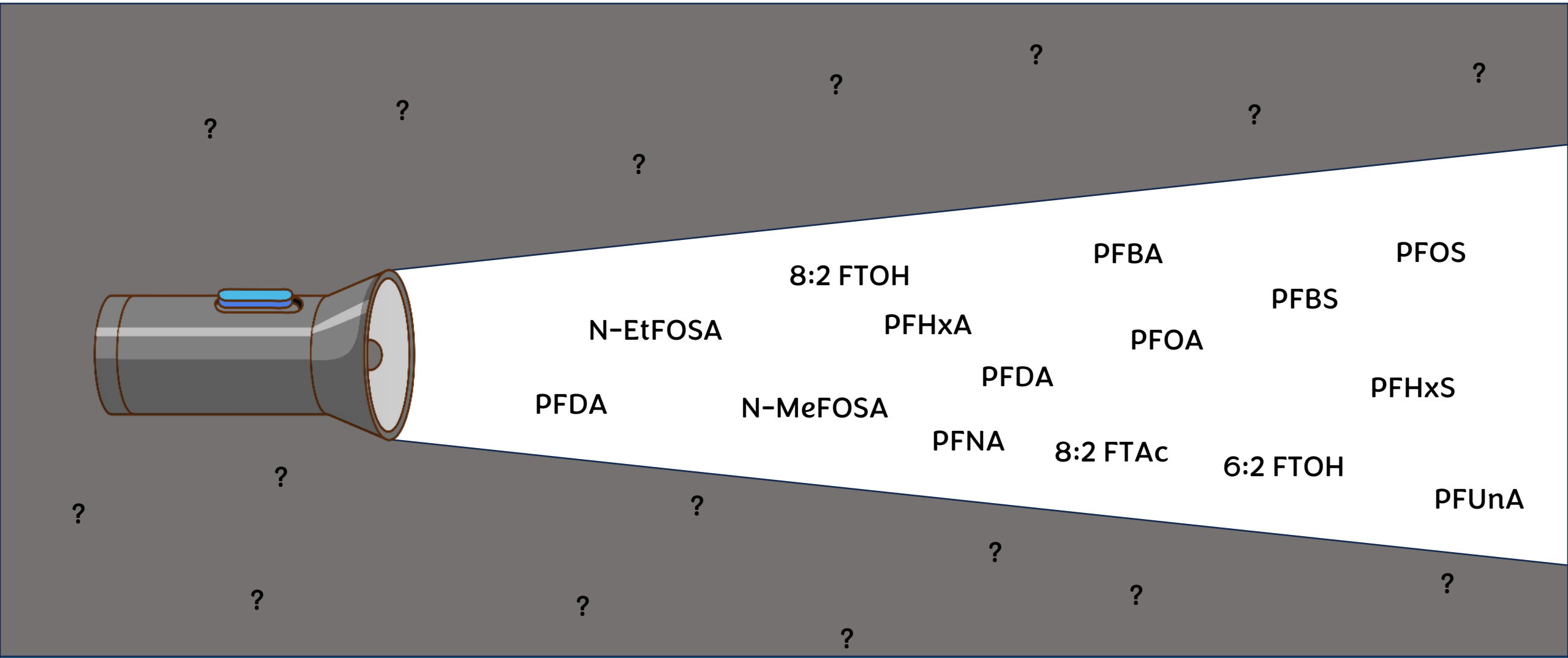
4. New obligations: PFAS analysis (single substances)



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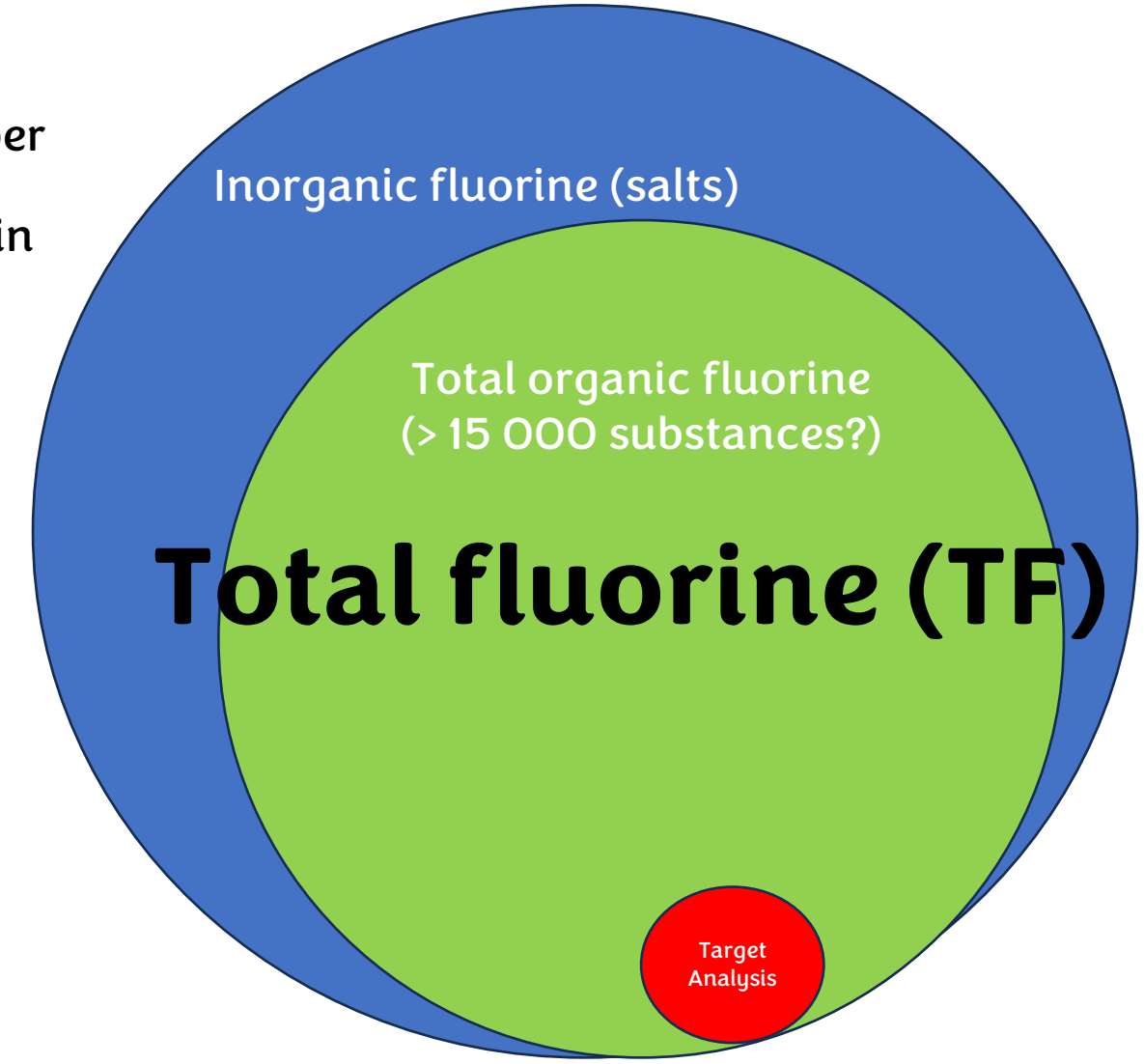
4. New obligations: PFAS analysis (total fluorine)

Calciumfluorid (CaF_2) as filler in paper

Talcum as filler or nucleating agent in plastic manufacturing



Curtzwiler et al J. AOAC Int. 2025 108(2), 137–143

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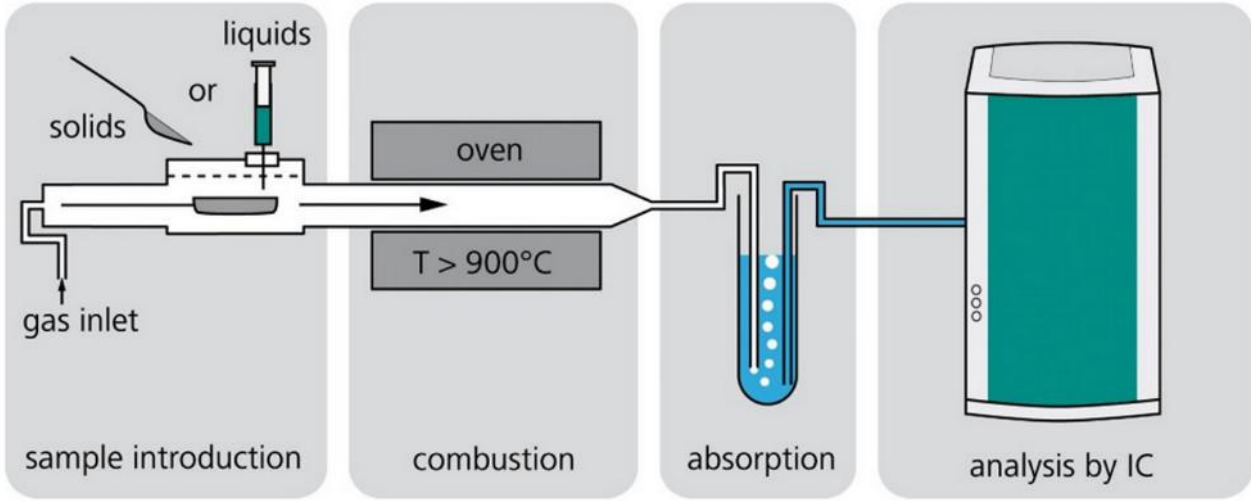
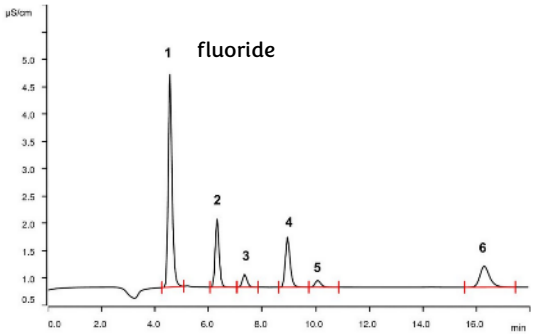
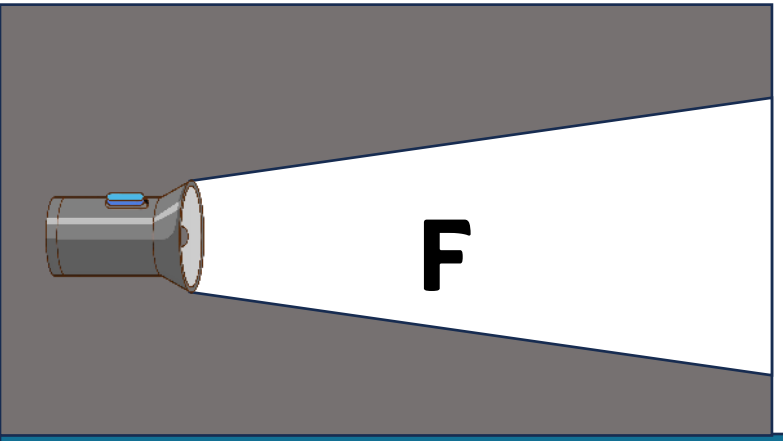
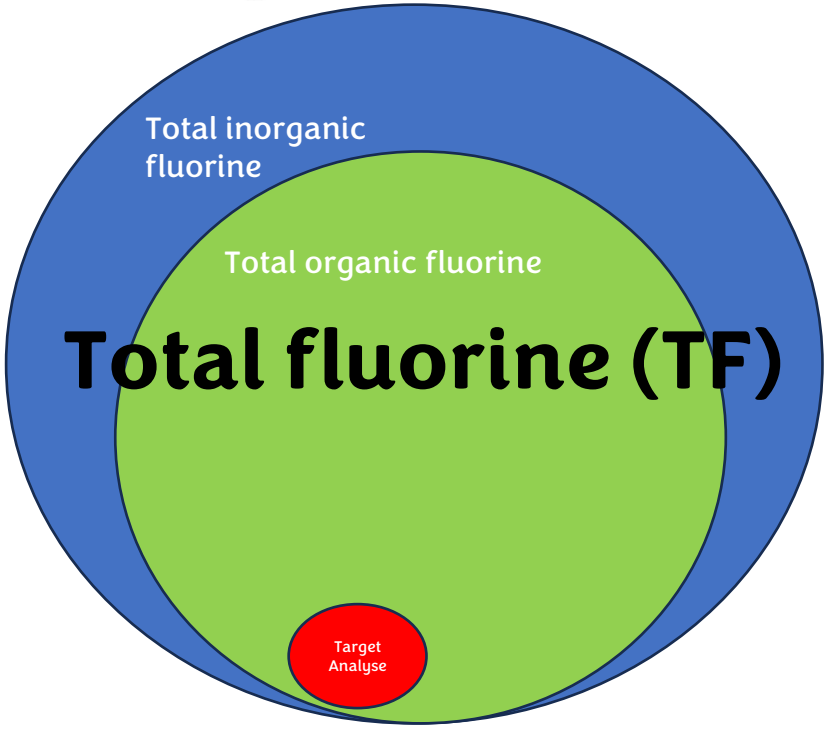
4. New obligations: PFAS analysis (total fluorine)









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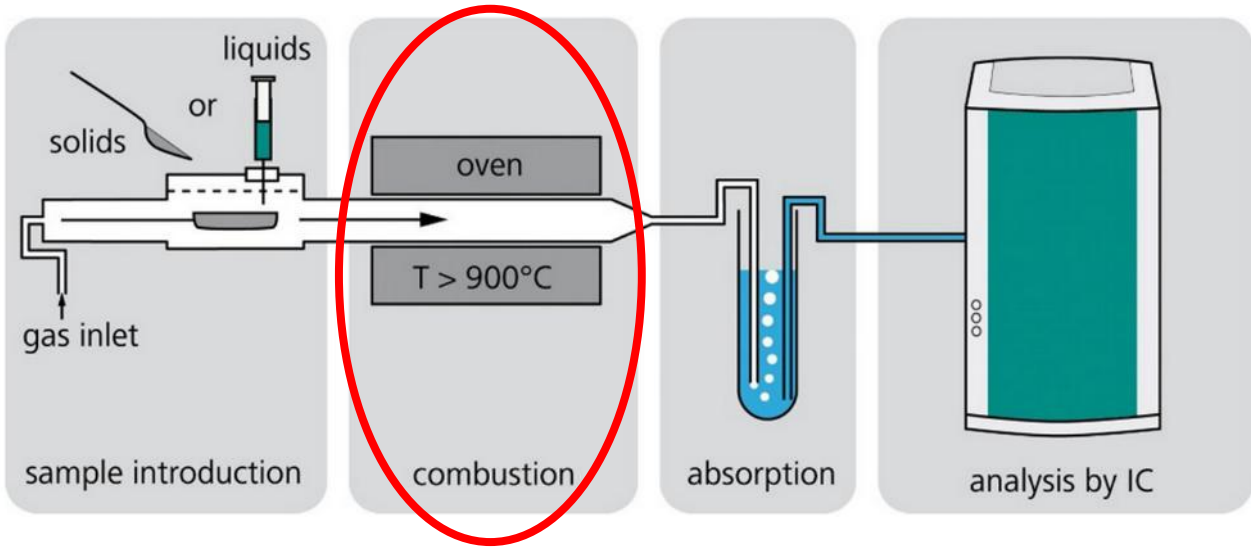
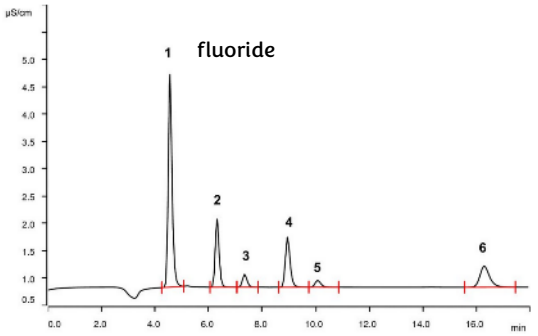
4. New obligations: PFAS analysis (total fluorine)





Depending on temperature and temperature gradient results can differ!

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5. What are the challenges?

Total Fluorine Analysis

Inorganic Fluorine from Calciumfluoride or Talcum can result in over- or underestimation!

No harmonized/standardized method right now

- high uncertainty with regards to reliability of results
- limited number of labs worldwide offering this service

Single Substance Analysis

Very different list of PFAS substances labs offer – results are not comparable

High tech instrumentation needed which is very expensive – limited capabilities in most supplying countries

Consequently significantly more expensive!

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6. PFAS strategy

Guidance document by EU is expected early next year

Check that no packaging supplier intentionally uses PFAS, don‘t forget adhesives, printing inks, labels etc.

For paper and board with water and fat-repealant properties as well as for PE and PP for high temperature applications (microwave or baking oven suitable) control total organic fluorine by an external laboratory.

Make sure laborarories have at least validated their methods. Better the methods are accredited!

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II. BPA rules

EU Regulation 2024/3190

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1. What is BPA and how is it used?
(1) Epoxy resins and coatings

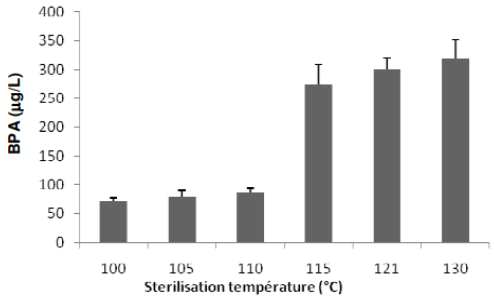
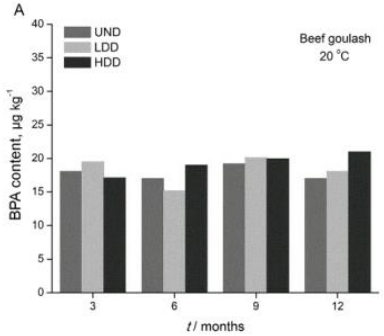


Figure 3. Influence of the sterilisation temperature on bisphenol A migration.

Biego et al Bull. Chem. Soc. Ethiop. 2010, 24(2), 159-166



Stojanovic et al J. Serb. Chem. Soc. 84 (4) 377–389 (2019)

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1. What is BPA and how is it used?
(2) Polycarbonates

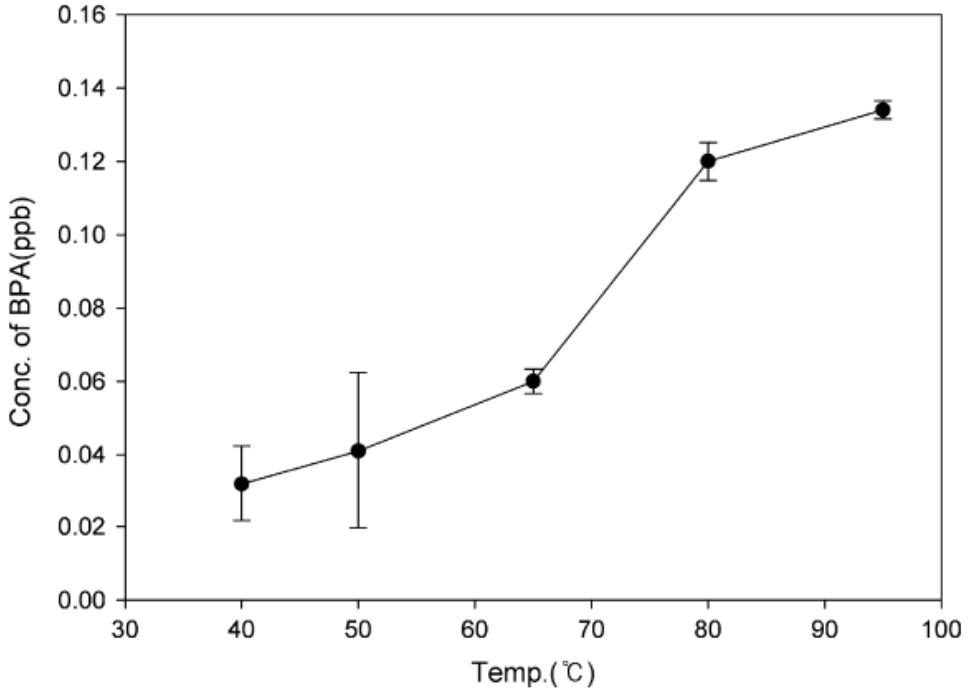

Fig. 3. Effect of extracted water temperature on the level of bisphenol A migration from new baby bottle.

Nam et al Chemosphere 79 (2010) 949–952

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1. What is BPA and how is it used?
(3) UV curing printing inks

Typical composition of a Bisphenol A based UV laquer

Component	Content in %
Epoxy Acrylate (made from BPA!)	15
TMPTA (trimethylolpropane triacrylate)	10
TMPEOTA (ethoxylated trimethylolpropane triacrylate	60
Benzophenone based photoinitiator	5
Amine	6
Photoinitiator 2-Hydroxy-2-methyl-1-phenyl-propan-1-one	4
Silicone acrylate	0.5

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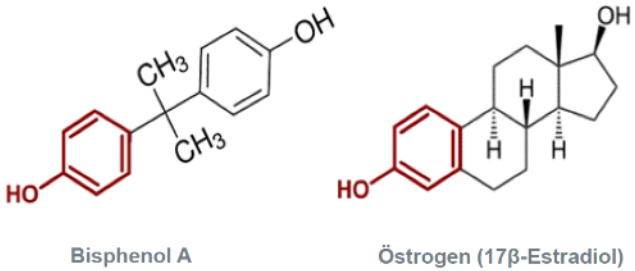
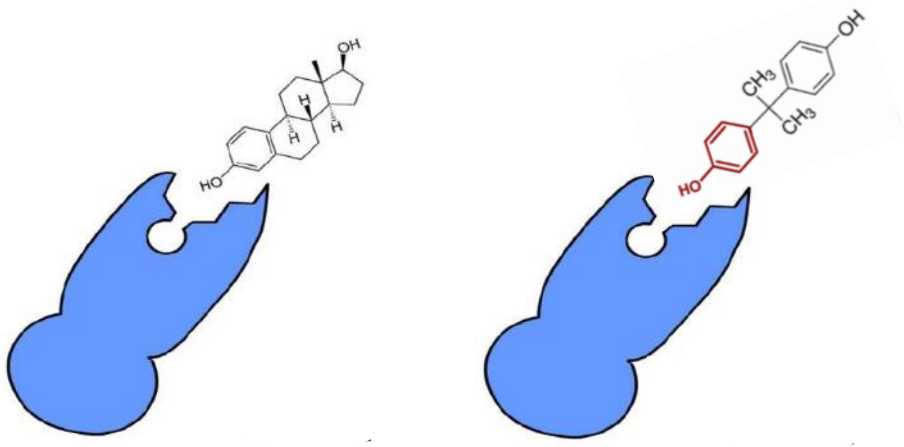
2. Why is the EU regulating BPA in packaging?

Bisphenol A is an endocrine disruptor = a chemical that mimics a hormone

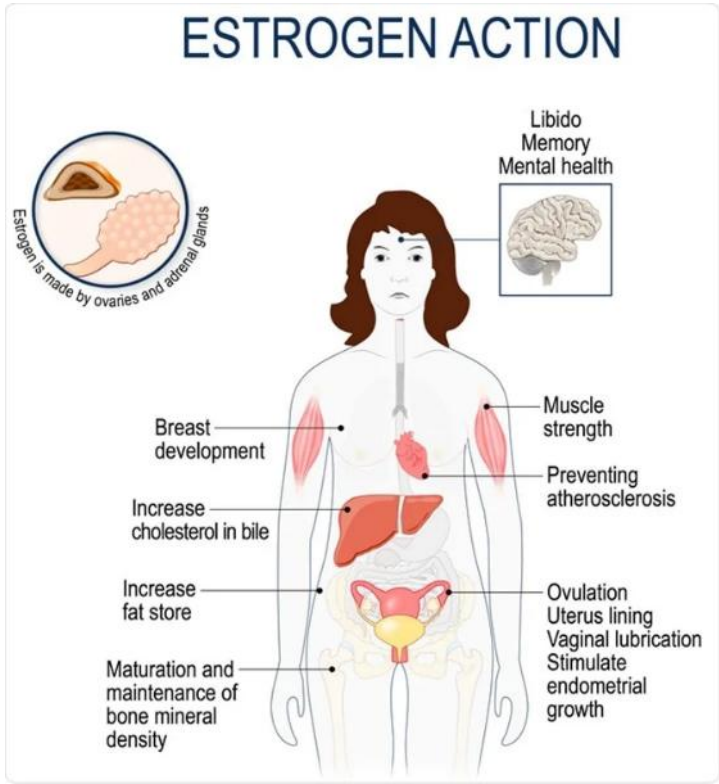


Bisphenol A

Östrogen (17β-Estradiol)



Very similar structure of BPA and Estrogen allows BPA to dock onto estrogen receptors



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3. BPA ban – Regulation (EU) No. 2024/3190

Bans the intentional use of Bisphenol A and other hazardous Bisphenols and Bisphenol-Derivatives in:

(a) adhesives;
(b) rubbers;
(c) ion-exchange resins;
(d) plastics;
(e) printing inks;
(f) silicones; and
(g) varnishes and coatings.

No strict BPA-ban in paper and board!

Intentional use is nevertheless not advisable

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3. BPA ban – Regulation (EU) No. 2024/3190

What are hazardous Bisphenoles?

Reference to CLP-Regulation (EU) No. 1272/2008

- Mutagenic — means these chemical damage human DNA
- Carcinogen — cause cancer
- Toxic to repoduction — harm unborn babies in mothers womb
  impact fertility
- Endocrine disruptor — mimics hormons in human bodies

Listed as of today:
- Bisphenol A (CAS 80-05-7)
- Bisphenol S (CAS 80-09-1)
- 4,4'-isobutylethylidendiphenol (CAS 6807-17-6)
- Bisphenol AF (CAS 1478-61-1) NEW: since 01.09.2025
- Tetrabrombisphenol A (CAS 79-94-7) NEW: since 01.09.2025

„Under critical observation"
Bisphenol B (CAS 77-40-7)
Bisphenol F (CAS 620-92-8)

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3. BPA ban – Regulation (EU) No. 2024/3190

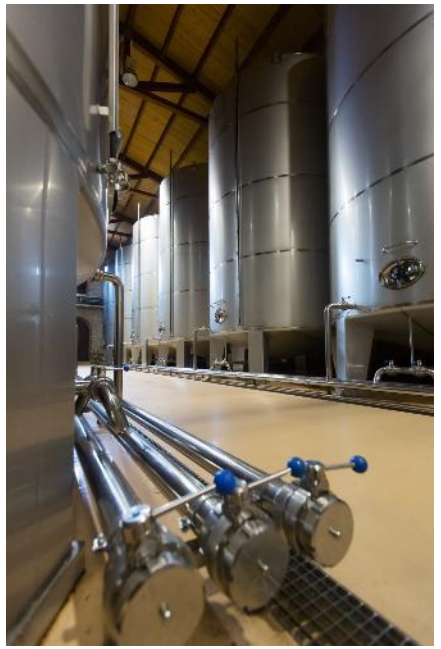
Prohibitions

Intentional use of Bisphenol A in materials and articles contacting food with two derogations listed in Annex II

Intentional use of other hazardous Bisphenoles (Currently mainly Bisphenol S and Bisphenol AF in materials and articles contacting food with two derogations listed in Annex II)

If materials and articles for food contact are manufactured with other (non-hazardous) Bisphenols (e.g. Bisphenol F, B etc) **Bisphenol A must not be detectable**

3. BPA ban – Regulation (EU) No. 2024/3190



Exemptions according to Annex II

- epoxy resins to be applied on self-supporting food contact materials or articles with a capacity greater than 1 000 litres

- Polysulfon filtration membranes

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4. New Obligations under Regulation (EU) No. 2024/3190

Declaration of conformity

Preparation of a Declaration of Conformity acc. to Annex III for all materials in scope of the regulation (plastics, printing inks, adhesive etc.)

(1) the identity and address as well as contact details including either a **current telephone number or email address** of the business operator issuing the declaration of compliance;

Must include a phone number or email address

(2) the identity and address as well as contact details including either a current telephone number or email address of the business operator which manufactures or imports the food contact material or article;

(3) the identity of the food contact material or article, including both intermediate food contact materials and final food contact articles;

(4) the date of the declaration;

Even in case no Bisphenols are intentionally used this must be confirmed!

(5) a **list of any bisphenols or bisphenol derivatives** used in the manufacture of the food contact material or article;

(6) a statement that the intermediate food contact material or article or final food contact article complies with **this Regulation** and the requirements set out in Articles 3, 15 and 17 of Regulation (EC) No 1935/2004

Reg 2024/3190 has to be mentioned by name

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4. New Obligations under Regulation (EU) No. 2024/3190

Analytical control (Article 9 (2))

2. Methods to control **content of BPA**, and **release of BPA into food**

   (b) a detection limit of 1 µg/kg

Identical very low limit for specifc migration AND for total content!!!

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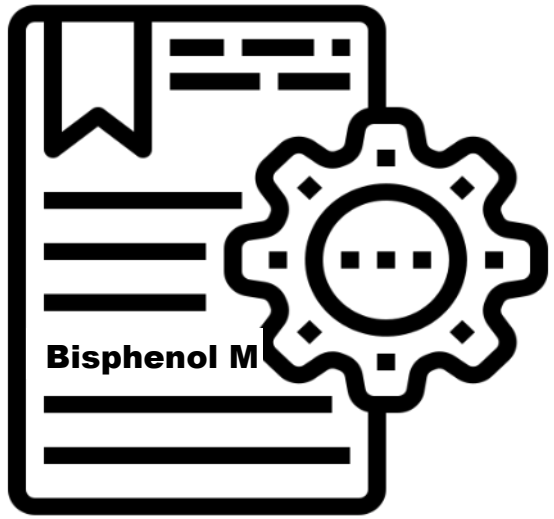
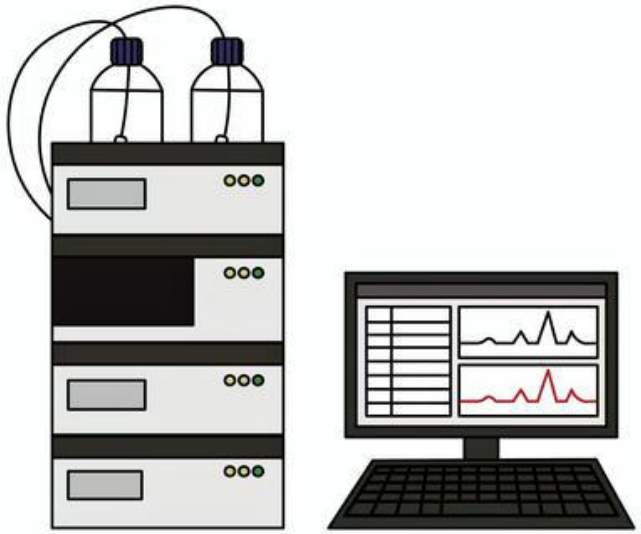
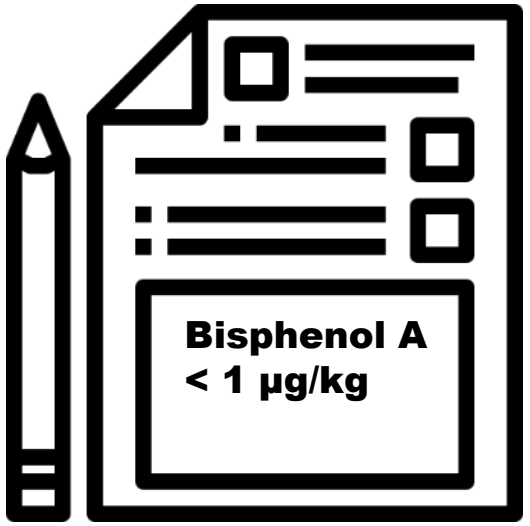
4. New Obligations under Regulation (EU) No. 2024/3190

Analytical control is needed

Materials and articles which are manfactured with other (non-hazaourdos) Bisphenols or Bisphenol derivates must not contain any **residual BPA content** (Article 4)







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4. New Obligations under Regulation (EU) No. 2024/3190

Analytical control is needed

Materials and articles which are manufactured based on an exemption in Annex II

Material type	Specific application	Restriction
Varnishes and coatings		**Migration** into food shall not be detectable.
Plastics		

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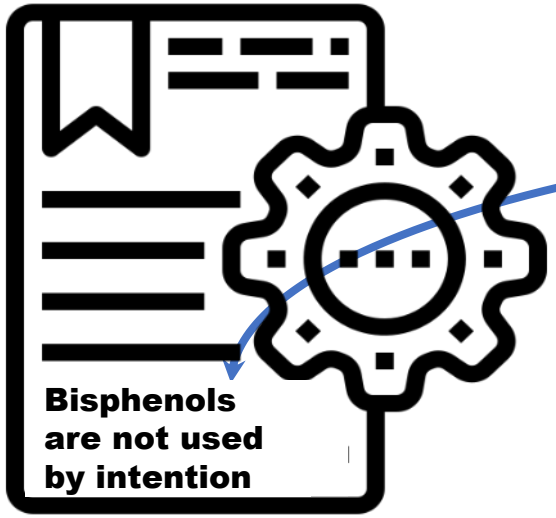
4. New Obligations under Regulation (EU) No. 2024/3190

Analytical control is not needed by law!



Includes contaminations of BPA! Meaning ONLY the intentional use is forbidden, unintentional contaminations e.g. from recycling processes are principally allowed!

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5. What are the challenges?

Extremely low detection limit required by new law

- Challenging to find laboratories offering this
- Risk of false positive results
    - meaning sample may be contaminated during transportation, e.g by unsuitable packaging
    - meaning sample may be contaminated by insufficient lab equipment

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6. Timeline of new BPA ban

Timeline:

Empty packaging

Empty packaging for fruits/vegetables and fish/fish products

Lacquers applied to the outer side of cans

Unlimited sale until exhaust of stock

One year to fill

One year to fill

20.07.2026

20.01.2028

20.01.2029

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Conclusion - How to comply with new on PFAS and BPA rules

PFAS

Regulation 2025/40

limit on the use of PFAS from 12.08.2026

- Make sure all suppliers of packaging **do not use** PFAS by intention
- Testing of total fluorine analysis is recommended for plastics which are suitable for high temperatures (baking oven or microwave) and for water and grease resistant paperboard
- Work throughout the supply chain for all other types of packaging to convince clients that absence declaration is sufficient

BPA

Regulation 2024/3190

general ban of use from 20 July 2026

- For very most packaging confirmation that BPA and any other Bisphenol **is not used** will be sufficient – very few exemptions discussed earlier
- If BPA analysis is needed make sure the lab you choose has experience with the extremely low limits and discuss measures to avoid contaminations

Thanks for your attention!

Questions?

Tel. +49 174 – 648 61 01

Andreas.Grabitz@FCMExperts.de

Thank you

AGRİNFO