

REACH PFOA Restriction Enforcement

*Development of EU standardised
analytical methods*



FluoroCouncil
Global Industry Council
for FluoroTechnology

Background and Purpose

- REACH PFOA Restriction sets forth two different concentration limits:
 - **25 ppb** for PFOA and its salts and **1 000 ppb** for one or a combination of PFOA-related substances, in other substances, mixtures or articles
- Recital 12 states that “***The deferral period for the restriction should allow the further development of suitable analytical methods that can be applied to all matrices.***”
- The FluoroCouncil would like to highlight the **complexity** of developing **reproducible, cost-efficient** analytical methods for **all matrices** in scope and against the **given thresholds**
- The FluoroCouncil would like to underline the importance of **timely adoption of analytical methods** to enable effective enforcement
- The FluoroCouncil is willing to **take part in the process** to share its knowledge and experience

Introduction to FluoroCouncil and FluoroTechnology

About the FluoroCouncil

- Represents leading manufacturers of FluoroTechnology products
- Member companies:
 - Archroma Management LLC
 - Arkema France
 - Asahi Glass Co., Ltd.
 - Daikin Industries, Ltd.
 - Solvay Specialty Polymers
 - The Chemours Company LLC
 - Dynax (associate member)
 - W.L. Gore and Associates (provisional member)

FluoroTechnology

Fluorotelomer-based products - Fluoropolymers

Fluorotelomer-based products: polymers and surfactants

- “Short” fluorinated chains that may be attached to organic polymer backbones
- **Modify material properties:** surface modification & protection, water & oil repellency; soil resistance, wetting and spreading
- **Applications:** Textiles, Carpets, Paper, Stone & Tile, AFFF, Surfactants

Fluoropolymers (Fluoroplastics & fluoroelastomers)

- High molecular weight polymers
- PTFE, Melt Copolymers, Thermoset Elastomers
- Fluorinated “backbone”
- **Material properties:** chemical resistance, thermal stability, resilience (elastomers)
- **Applications:** Breathable membranes, Aerospace Materials, Hydraulic tubing, Chemical Processing , Semiconductor Manufacture, Transportation

FluoroCouncil's views on analytical methods to enforce the REACH PFOA Restriction

What is needed?

- **European Standard** in order to demonstrate if the limit values set in the REACH PFOA Restriction are met or not, **for** :
 1. **Fluorotelomers (fluorinated polymers and surfactants)**
 2. **Fluoropolymers and fluoroelastomers** (not covered as such by the Restriction)
- **Initial screening methods**, easier to implement and less costly for enforcers

	FLUOROTELOMERS: FLUORINATED POLYMERS AND SURFACTANTS	FLUOROPOLYMERS AND FLUROELASTOMERS
Target analytes	PFOA, 8:2 FTOH, monomer (fluorinated polymers), 8:2 FTS (AFFF)	PFOA
Sampling preparation	Matrix dependent: textile, firefighting foams etc.	May differ between different forms of fluoropolymers and fluoroelastomers and matrix

FluoroCouncil's recommendations

- Analytical standards methods should take most account of the following two aspects:

Practicability

While sample preparation is matrix dependent, the analytical methods should be broadly available and applicable to the largest possible scope of products

Economic feasibility

The analyticals methods should not result in too high costs for industry and enforcers

Fluoropolymers/Fluoroelastomers

Examples of analytical methods

Analyte	Matrix	Type of fluoro-chemistry	LOQ or LOD	Instrumentation method	Cost estimate
PFOA	Articles made of fluoropolymers	Fluoropolymers	ppb levels	LC-MS/MS	€ 500-1700 depending on matrix /sample preparation
PFOA	Aqueous polymeric dispersion	Fluoropolymers			
PFOA	Articles made of fluoroelastomers	Fluoroelastomers			

Fluorotelomers

Examples of analytical methods

Analyte	Matrix	Type of fluoro-chemistry	LOQ or LOD	Method	Cost estimate
PFOA	Performance Textiles	Fluoro-telomers	ppb levels	LC-MS/MS GC-MS/MS	€ 500 (+ sample preparation cost)
8:2 FTOH	Performance Textiles				
PFOA / 8:2 FTS	Fire Fighting Foams	Surfactants			

Initial screening methods

Analyte	Matrix	Type of fluoro-chemistry	LOD or LOQ	Instrumentation method	Cost estimate
8:2 FTOH vs. 6:2 FTOH	Articles treated with fluorotelomers	Fluoro-telomers	ppm levels	GC/MS	€250
PFOA	Any matrix containing fluoroproducts (articles, resins, dispersions and other substances or mixtures)	All fluoro-products		LC-MS/MS	€ 250-450 (+ sample preparation cost)

Standard development process

- PFOS precedent with CEN/TS 15968:
 - To our knowledge, technical specifications not yet converted to a European standard mainly related to reproducibility issues
 - Highlights complexity of the issue and extension to PFOA and PFOA-related substances.
- Next steps in development of analytical methods and possibilities for the FluoroCouncil to take part in the process?
- How could the Commission / ECHA Enforcement Forum support enforcement of the Restriction by competent national authorities?

Thank you