



PFAS: What You Need to Know When Testing or Defending a Product

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Today's Speakers

Justin Burmeister

*Director - Chemistry and Business
Innovation*

ATS Laboratories



Tom Lewandowski

Toxicologist and Principal

Gradient: Seattle, Washington



Mark Todzo

Partner

Lexington Law Group



Lynn Fiorentino

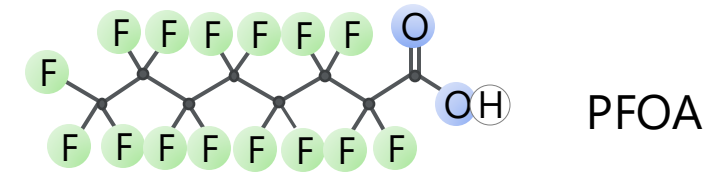
Partner

ArentFox Schiff

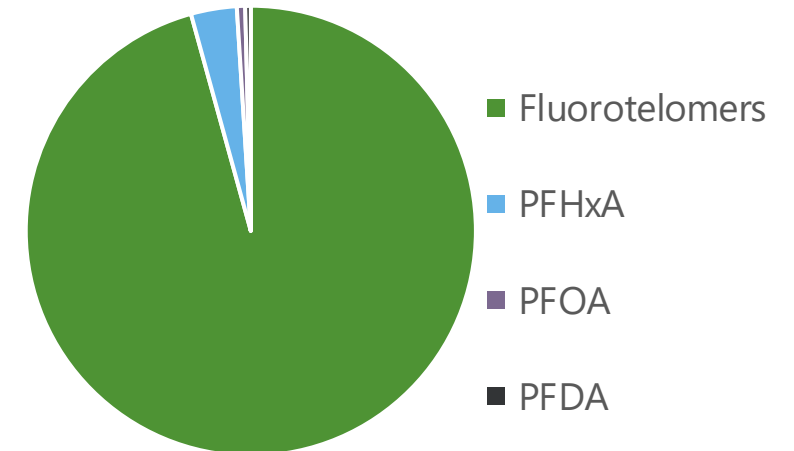


Topic 1: What is PFAS?

- Poly Fluoro Alky L Substances – organic chemicals with multiple fluorine atoms
- Exact definition of PFAS is variable and potentially very complicated
- OECD (2018) estimated nearly 5,000 chemicals meeting their definition of PFAS were in commerce
- Fluoro monomers are used to make fluoropolymers which can degrade to generate fluoro monomer again
- Carbon-fluorine bond is very resistant to reacting – good for stain resistance, water repellency, reducing friction, withstanding heat, etc., etc.
- Chemical resistance means some PFAS can be persistent in the environment and show up in unintended places (like raw material streams)



PFAS in Recycled Paper Fiber (Toilet Paper)
(Thompson *et al.*, 2023)



Where Can PFAS Compounds be Found?

Intentional vs unintentional

- Paints/Coatings
- Fluoropolymers – Wire Covers
- Packaging – Paper Products
- Water-Resistant fabric
- Electronic Products
- Household Goods
- Fragrances/Personal Care Products
- Processing Aids – Manufacturing
- Compost
- The Environment
- People

Cleaning Products/
Floor Finishes



Circuit Board
Manufacturing



Fragrances and PCPs



Water-resistant Material



Topic 2: Health Effects of PFAS and Deriving a Safe Harbor Value

- Three PFAS are listed under Prop65
 - Perfluorooctanoic acid (PFOA) – cancer & developmental
 - Perfluorooctanoic sulfonate (PFOS) – cancer & developmental
 - Perfluorononanoic acid (PFNA) – male repro
 - No Safe Harbor values established
- Data are complicated even for PFOA/PFOS, the best studied
 - Data in rodents are less than ideal
 - Rats have very different metabolism of PFAS relative to humans; half lives for PFOA/PFOS in rats are hours or days versus years in humans
 - Is the mechanism of carcinogenicity in rodents relevant for humans?
 - Studies in rodents use doses far above human exposures (even more than for other chemicals)
 - Will complicate derivation of Safe Harbor values



What Can We Glean From Other Regulatory Limits for PFOA?

Regulatory Limit	Limit	Comment
California Public Health Goal (2024)	0.000007 µg/L	Kidney cancer. Based on a 10 ⁻⁶ cancer risk standard, Prop65 employs a 10 ⁻⁵ cancer risk standard.
Steenland et al., 2022	0.0000015 ug/L	Kidney cancer. For a 10 ⁻⁶ cancer risk. UC Irvine authors.
US EPA Reference Dose (2022)	0.0000015 µg/kg-day	Based on immune effects, not cancer, not relevant to Prop65
Burgoon et al., 2023	0.07 µg/kg-day	Based on Lau et al. study of developmental toxicity in mice. Uncertainty factor is 63 vs required 1000 under Prop65.
Health Canada drinking water objective (2024)	0.03 µg/L (for all PFAS)	For combined concentration of 25 PFAS chemicals

- Safe Harbor values for the three Prop65 listed PFAS are likely to be very low – low ng/day range
- For comparison, the Safe Harbor for lead (MADL) is 0.5 µg/day (500 ng/day)

Topic 3: Analytical Challenges in Testing for PFAS

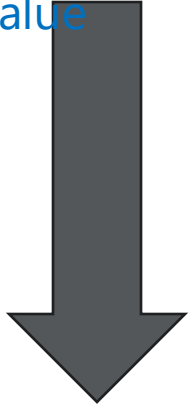
1. Screening vs testing for individual compounds (pros/cons)
2. Methodology used to complete the testing
3. Importance of detection limits
4. Effect of matrix
5. What you should ask your lab partner?



Matrix Effect on Analysis of Samples: How to Identify and Solve

Suppressive

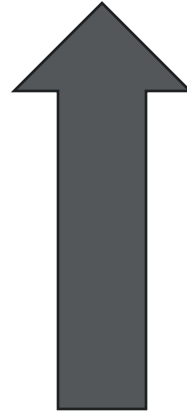
Actual
Value



Low Measured Value

Additive

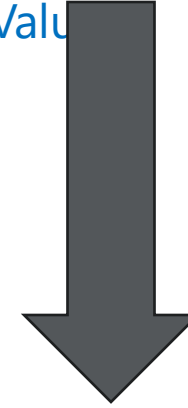
High Measured
Value



Actual
Value

Neutralizing

Actual
Value



False Negative



Topic 4: Plaintiff's Bar Perspective on Prop65 and PFAS Chemicals

1. Not everything with PFAS is a prop 65 issue – there are over 10,000 PFAS chemicals, only three of which are actionable under P65;
2. Splashy headlines regarding PFAS found in consumer products does not equate to a P65 violation;
3. When articles and studies refer to finding PFAS, they usually are using total fluorine content as a proxy for PFAS, but again, that does not equate to a P65 violation;
4. In order for PFAS content to equate to a P65 violation, there must be an exposure to PFOS, PFOA and/or PFNA resulting from use of the consumer product.
5. If you read about PFAS in a consumer product, you can first test for fluorine as that's cheaper than testing for PFOS, PFOA and PFNA and if there's no fluorine there won't be any PFOA, PFOS or PFNA; Assuming PFAS is found, you can have products testing for PFOA, PFOS and PFNA.

Topic 5: Defense Bar View on What Companies Need to Know About PFAS and Prop. 65

- The PFAS Enforcement Landscape – What Are We Seeing?
 - PFOA: 230 Notices since 2019; 33 settlements (shower curtains, jackets, hunting vests)
 - PFOS: 32 Notices since 2022; 2 settlements (coverall bibs, discharges into drinking water)
 - PFNA: 8 Notices since 2022; (tablecloths, shower curtain liners, protein fruit smoothies)
- What To Do When Your Client Receives a PFAS NOV:
 - Scrutinize the Plaintiff's test results
 - Examine potential defenses
- Best Practices for Compliance:
 - Product testing
 - Robust dialogue with supply chain
 - Indemnification provisions

Take Aways and Recommendations

- **Know your laboratory**
 - Confirm laboratory capability to analyze PFAS and achieve needed detection limits
 - Discuss your testing plan, what are you testing for? What are the potential issues of testing the product?
 - Don't be shy to ask lab to describe their expertise in Prop 65 testing and your product type!
- **Know your Prop 65 consultant**
 - If you don't know how to interpret a lab report, work with a Prop 65 consultant who has experience evaluating laboratory reports and conducting risk assessment
- **Most importantly, know your product and supply chain**
 - Listed PFAS may be present as intentionally added ingredients or unintended residuals
 - Lab testing performed correctly will provide you with good insight into whether your product triggers PFAS concerns!

Q&A