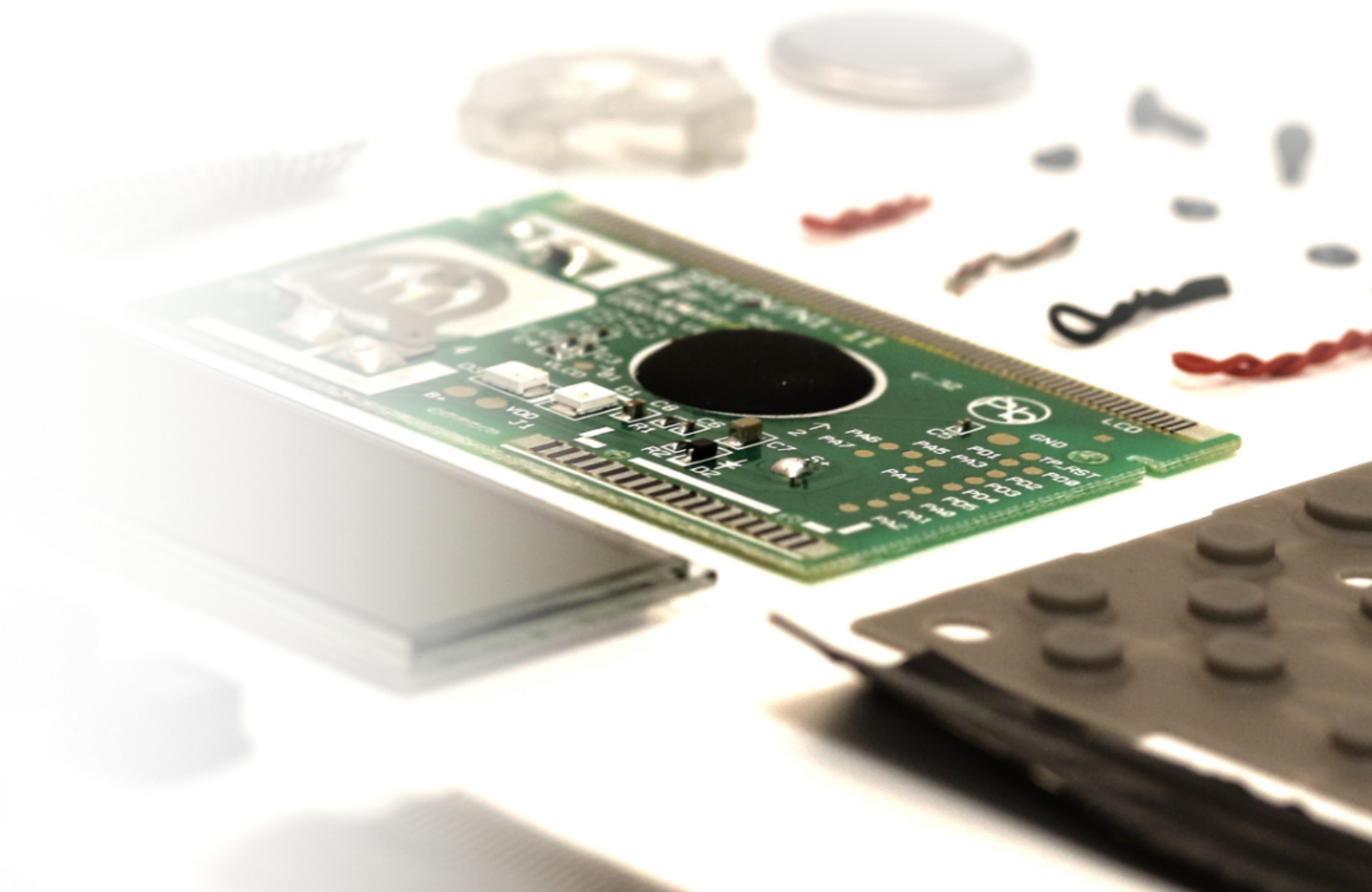




Claigan Webinar - ECIA PFAS Reporting for Electronics

Presented by:
Bruce Calder
VP Consulting

April 24, 2024



Claigan Environmental

- **Claigan Environmental**

- When it comes to restricted materials in physical products, Claigan has the most in-depth practical knowledge in the world.
- If you have a question about restricted materials, Claigan has the answer. Whether you seek guidance on product compliance or the interpretation of regulations, Claigan has the answer.
- With both an ISO 17025 accredited laboratory and a globally renowned consultancy housed under one roof, Claigan provides insights not available anywhere else.
- [About Us](#)

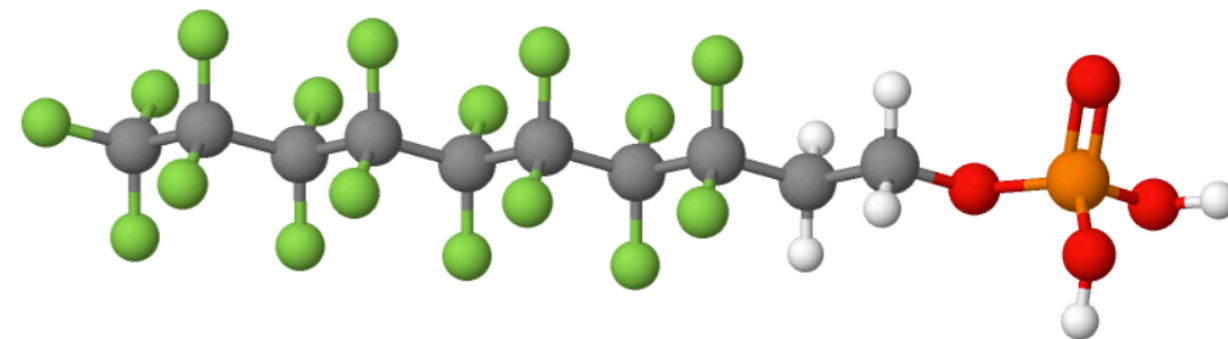
- **Bruce Calder**
 - Claigan stands at the forefront as the global authority on PFAS in products, and Bruce has been pivotal in this position. His contributions include submitting technical insights and comprehensive testing data to regulatory bodies across the EU, US, Canada, and Australia, as well as to the United Nations.
 - Bruce's research on the unintended presence of PFOA in products is shaping discussions for the UN Stockholm Convention meeting in September of 2025.

Overview - Agenda

- Update - Maine PFAS
 - Amendment to scope
- Banned PFAS
 - PFOA / LC-PFCA in products
- Canadian Plastics Registry

- TSCA PFAS Reporting
 - Process in practice
 - Phase 1 - Identifying PFAS in Product
 - Phase 2 - Creating chemical template
 - Phase 3 - Merging in volumes
 - Report to EPA in CDX

- Q&A



8:2 MonoPap

Maine PFAS - UPDATE

- **Two changes in the works**
 1. 2024 amendment to legislation
 2. Current Unavoidable Uses (CUU)

32 K. A semiconductor, including semiconductors incorporated in electronic equipment,
33 and equipment and materials used in the manufacture of semiconductors;

34 L. Nonconsumer electronics and nonconsumer laboratory equipment not ordinarily
35 used for personal, family or household purposes; and

36 M. Equipment directly used in the manufacture or development of the products
37 described in paragraphs E to L.

38 **5. Prohibition on sale of products containing intentionally added PFAS.** This
39 subsection governs sales of products containing intentionally added PFAS.

40 ~~Effective~~ Except as provided pursuant to paragraph F or G, effective January 1,
41 2023, a person may not sell, offer for sale or distribute for sale in this State a carpet or
42 rug that contains intentionally added PFAS. ~~This~~ The prohibition under this paragraph

Maine Amendment - PFAS

- **Progress**

- Passed House in April
- Passed Senate in April



- **More or less guaranteed for adoption**

- Note - does not include input from recent consultation on definitions and currently unavoidable uses
- May be further amended in future

Maine Amendment - PFAS

- **Exempted from Scope ([Legislation](#))**
 - No reporting or restriction requirements
- **Exempted products**
 - Product packaging
 - Medical devices (including veterinarian)
 - Products for public health, environmental or water testing
 - Products required to meet requirements of
 - DoT, DoD, Homeland Security
 - Excluded from exemption - textiles and refrigerants
 - Motor vehicles
 - Semiconductor including semiconductor components
 - Non-consumer electronics and laboratory equipment
 - *Not normally for personal, family, or household purposes*
 - *Plus* equipment used to manufacture the above, water craft, used products, federal mandated PFAS uses, and fire fighting foam

Maine Amendment - PFAS

- **Notification**

- Notification is only required for PFAS uses that are **C**urrently **U**navoidable **U**ses (CUU).
- CUU will be listed in the next Maine amendment
- Notification date is no longer Jan 2025
 - The CUU details should provide details on timeline
- Notification contains the same requirements
 - Brief description of product
 - Purpose of PFAS
 - Amount of PFAS by CAS number
 - Name and address of the manufacturer and contact person
 - CUU identity
 - Fee payment

Upcoming PFAS Deadlines

- **2025**

- In scope

- EU PFOA/LC-PFCA Restriction (REACH and POP) (*current*)
- US TSCA PFAS Reporting
- Australia PFOA/LC-PFCA Restriction
- *Canadian PFAS reporting (Section 71) - expected*

- Out of scope

- Maine PFAS reporting (except consumer products)

Sources of PFOA / LC-PFCA

- **In physical products**

- **ePTFE (expanded PTFE)**

- Flexible PTFE



- **PFA (Perfluoroxyalkane Polymer)**

- Thin highly flexible high temperature wire



- **Fluoroacrylates**

- Water proof coating



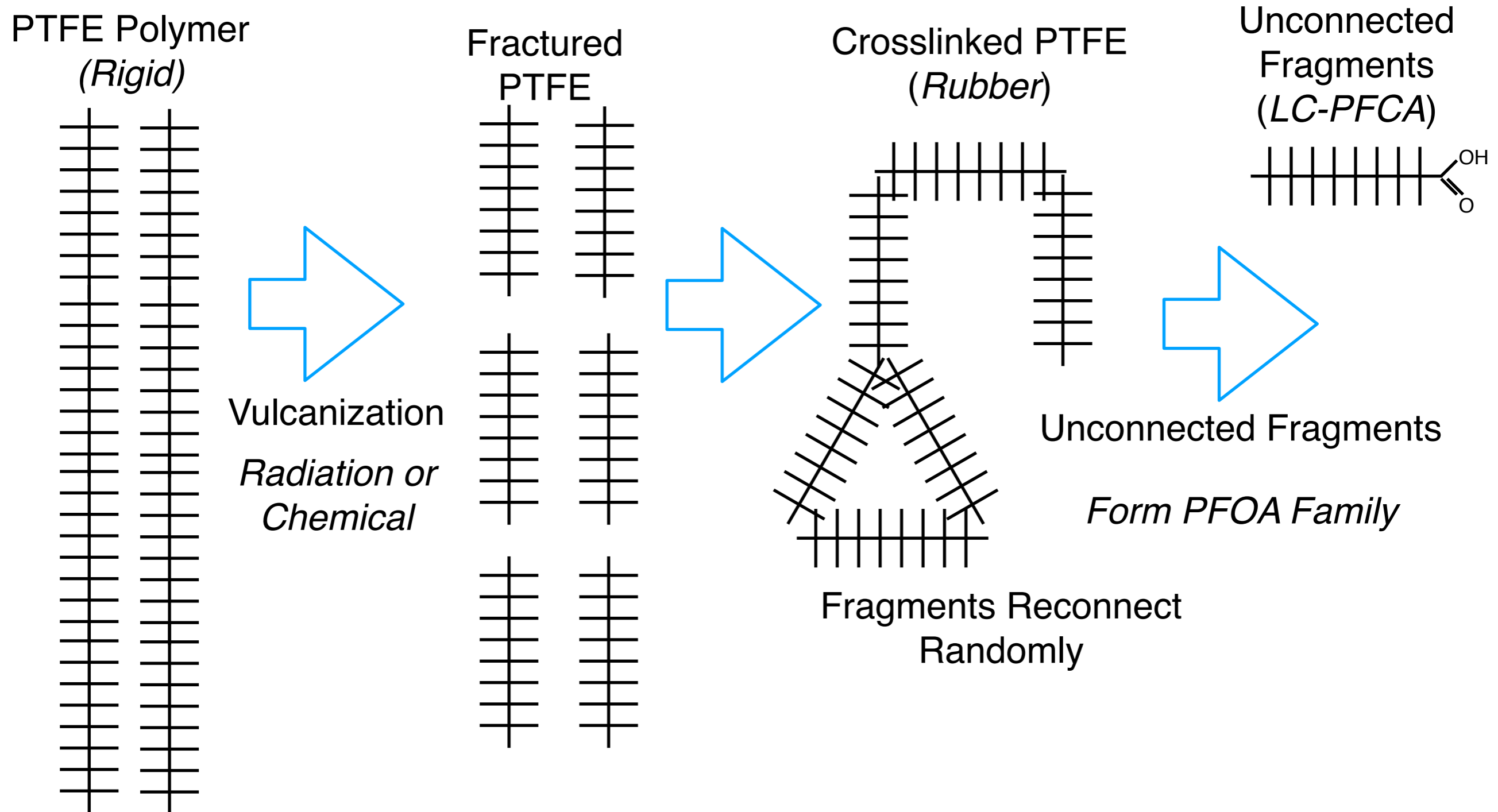
Sources of PFOA / LC-PFCA

- **In physical products**
- **ePTFE (expanded PTFE)**
 - Flexible PTFE
- **PFA (Perfluoroxyalkane Polymer)**
 - Thin highly flexible high temperature wire
- **Fluoroacrylates**
 - Water proof coating



'Vulcanization' of PTFE

- Perfluorocarboxylates created by fracturing and cross linking of PTFE polymer**



Supplier Declarations

[REDACTED]

August 23, 2019

Dear Customer:

I wanted to follow up with you regarding your questions sent on August 23, 2019. In 2006, as part of a commitment to phase out the use of PFOA in the manufacturing of fluoropolymers, eight major global manufacturers in the U.S., Europe and Japan agreed to participate in US EPA's 2010/2015 voluntary PFOA Stewardship Program (<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program>).

Under this program manufacturers developed alternative technologies that have allowed us to stop using PFOA as a polymerization processing aid in the manufacturing of fluoropolymers.

manufacturing facilities. [REDACTED] fluoropolymer products are manufactured in accordance with requirements specified by the US Environmental Protection Agency which limit the residual amount of the polymerization processing aid which can remain present as an impurity in [REDACTED] fluoropolymer products to < 200 ppb when measured using methods specified by EPA. (Larsen et al., Efficient "total" extraction of perfluorooctanoate from polytetrafluoroethylene fluoropolymer," Analyst, 2006, 131, 1105-1108.) Thus, we expect the residual polymerization processing aid impurity to be almost entirely removed, or to remain present at only trace levels, before commercial products ever leave our manufacturing site.

[REDACTED]

June 5, 2020

Commission Regulations (EU) 2017/1000 and (EU) 2019/1021

[REDACTED]

The EU has taken measures to regulate PFOA, its salts and PFOA-related compounds in a wide range of products under Annex XVII of EU REACH, Commission Regulation (EU) 2017/1000 and Annex I to Regulation (EU) 2019/1021 (EU Persistent Organic Pollutants Regulation) (as adopted on April 8, 2020 and with an enforcement date of July 4, 2020). These regulations require, subject to certain exceptions, that from July 4, 2020, mixtures and articles placed on the market in the European Union will require a concentration of ≤ 25 ppb of PFOA, including its salts, and ≤ 1000 ppb of one or a combination of PFOA-related compounds.

PFOA is not used by [REDACTED], intentionally added, in any of its manufacturing processes. However, as a committed supplier, we have analyzed [REDACTED] filled PTFE Compounds for trace levels of PFOA for compliance with Commission Regulation (EU) 2017/1000, using a protocol developed by [REDACTED]. For details of the test method, click on the link below:

[REDACTED]

Based on analysis of representative samples and based on our knowledge of the manufacturing processes used to produce these products, the [REDACTED] filled PTFE Compounds listed in the Appendix are compliant with (EU) 2017/1000 and (EU) 2019/1021.

Difference - in 2020, they started to remove PFOA after processing of the ePTFE powder

PTFE Resin Testing

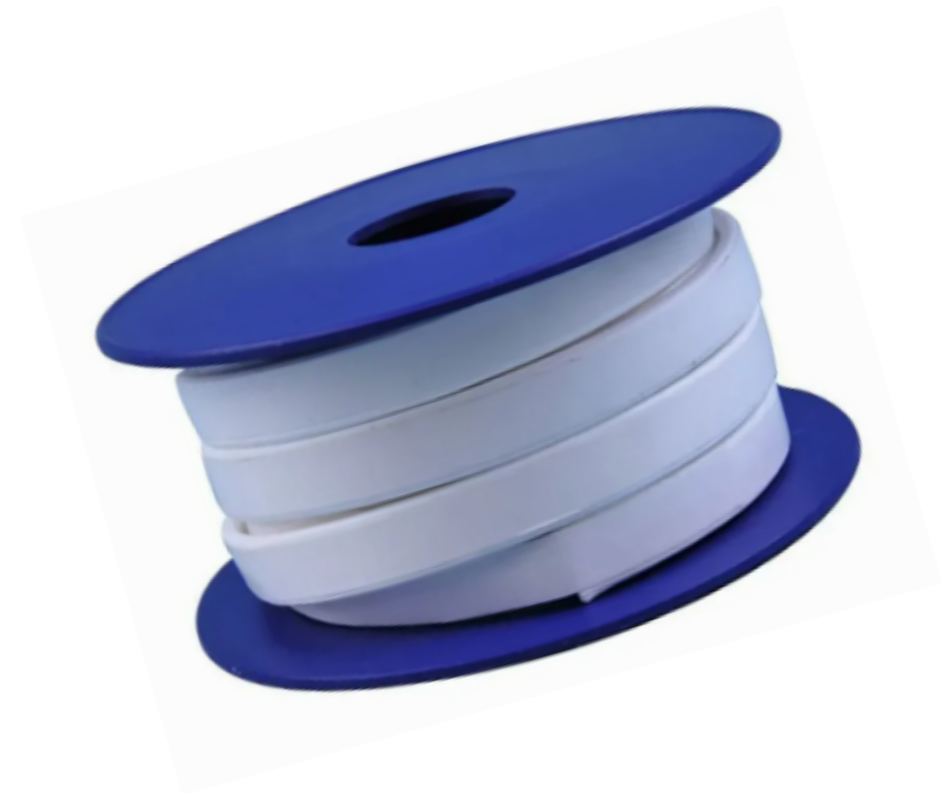
RESIN TESTING - 2020

SAMPLE ID	MATERIAL	RESIN / DISPERSION	STATUS	ppb
Type 1	Pure Fine Powder	Supplier A - R1	TESTED IN LAB US	2
Type 2 (Type11-EU)	Pure Fine Powder	Supplier A - R2	TESTED IN LAB US	4
Type 3	Pure Fine Powder	Supplier B - R1	TESTED IN LAB US	ND
Type 2 (Type13-EU)	Pure Fine Powder	Supplier C - R1	TESTED IN LAB US	316
Type 25 (Type17-EU)	Pure Fine Powder	Supplier C - R2	TESTED IN LAB US	575
Type 2 (Type11-EU)	Pure Fine Powder	Supplier A - R2	TESTED IN LAB SWITZERLAND	<19
Type 21 (Type13-EU)	Pure Fine Powder	Supplier C - R1	TESTED IN LAB SWITZERLAND	790
Type 25 (Type17-EU)	Pure Fine Powder	Supplier C - R2	TESTED IN LAB SWITZERLAND	1700

ePTFE Test Results

MARKET PRODUCTS SURVEY 2023 – ePTFE TAPES

Manufacturer	ppb
T	ND
C1	76
C2	47
C3	130
C4	58
C5	27



Lab in Switzerland: Methanol for 2h at 60C (Detection Limit: 10ppb)

Sources of PFOA / LC-PFCA

- In physical products

- ePTFE (expanded PTFE)

- Flexible PTFE



- **PFA (Perfluoroxyalkane Polymer)**

- Thin highly flexible high temperature wire



- Fluoroacrylates

- Water proof coating



Sources of PFOA / LC-PFCA

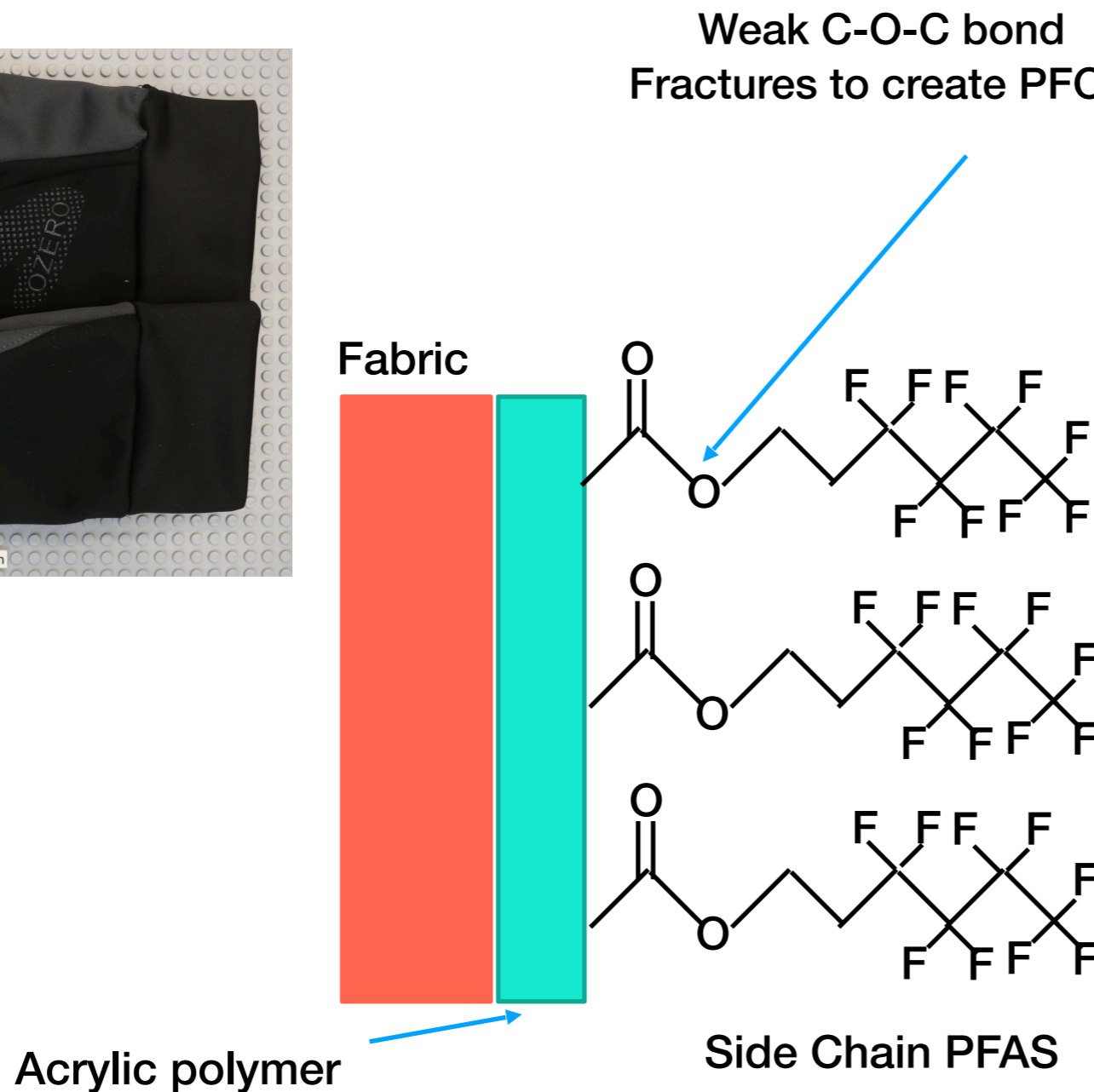
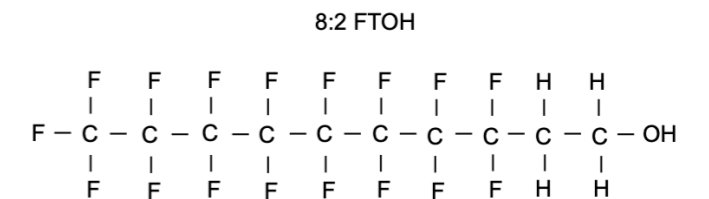
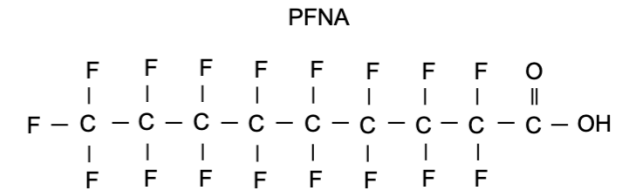
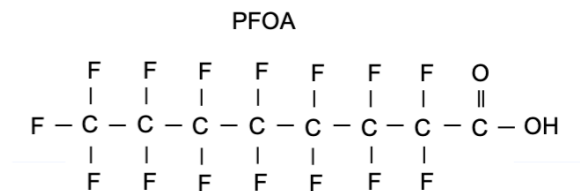
- **In physical products**
- **ePTFE (expanded PTFE)**
 - Flexible PTFE
- **PFA (Perfluoroxyalkane Polymer)**
 - Thin highly flexible high temperature wire
- **Fluoroacrylates**
 - Water proof coating



Fluoroacrylates

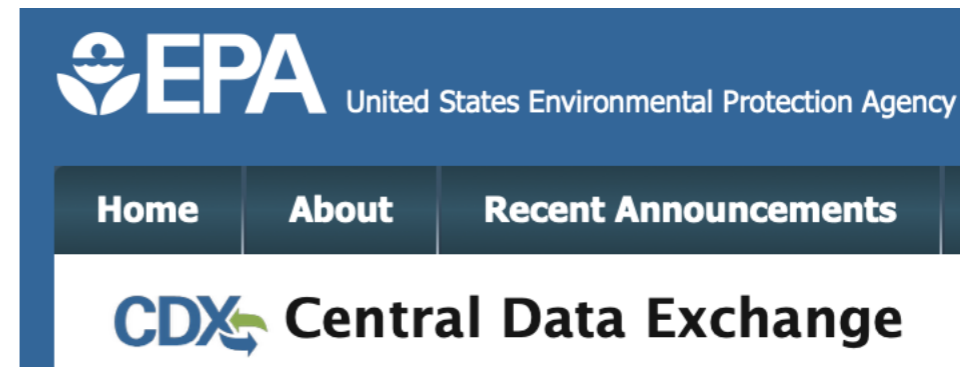
- **Fluoroacrylates**
 - Fluoroacrylic coatings for fabric

Weak C-O-C bond
Fractures to create PFOA



US TSCA PFAS Reporting

- [Companies must report](#) PFAS imported into or manufactured in the US
 - Back to 2011
- Deadline
 - **May 8 2025**
 - If > 120M in sales in US (including parent company)
 - **November 12 2025**
 - If < 120M in sales in US (including parent company)



Canadian Plastic Reporting

- **Canada has announced a registry for reporting of all plastics in electronics and packaging.**
- Scope
 - Packaging
 - Electronic and electrical equipment
 - Agriculture products
 - White goods
 - Textiles
 - Automotive
 - Construction

EEE In Scope

- **Category I: Electronic and Electrical Equipment (EEE), within the following subcategories:**
 - (1) Electronic or electrical information technology or telecommunication devices or equipment
 - (2) Electronic or electrical audiovisual and consumer equipment or media
 - (3) Electronic or electrical appliances
 - (4) Electronic or electrical tools, other than large-scale stationary industrial tools
 - (5) Electronic or electrical lighting equipment
 - (6) Electronic or electrical toys
 - (7) Electronic or electrical sports equipment
 - (8) Electronic or electrical devices for arts, hobbies or crafts
 - (9) Electronic or electrical monitoring and control instruments
 - (10) Electronic or electrical dispensers
 - (11) Electronic or electrical medical devices or equipment
 - (12) Accessories for use with any products referred to in Category I
 - (13) Photovoltaic panels
 - (14) Chargers for battery-electric vehicles and plug-in hybrid electric vehicles, whether free-standing or wall-mounted

Canadian Plastics Registry

2025 Reporting



- **Products required to report in 2025**
 - Packaging
 - Category I: Electronic and Electrical Equipment (EEE)

- **Deadline September 29 2025**
 - For products manufactured in or imported into Canada in 2024

Canadian Plastic Reporting Reporting Requirement in 2025

- **Requirement**
 - Certification that information is true
 - Business identity and address
 - Plastic resin (imported or manufactured)
 - Identity of each resin (ABS, HDPE, etc..)
 - Source of resin (virgin, recycled, etc..)
 - Total quantity of each resin (in kg)
 - Method used to quantify the above

Claigan Process

Canadian Plastics Reporting

- **Short summary**
 - Very similar process to generator PFAS TSCA Report
 - Phase 1 -
 - Identify plastics in representative products
 - Phase 2 -
 - Create plastics reporting template for each representative product
 - Phase 3 -
 - Merge volume data with representative product information
- Report to Canadian government (September 29 2025)

US TSCA PFAS Reporting

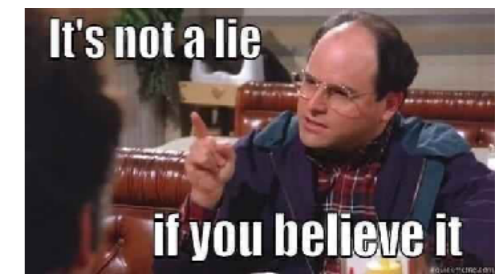
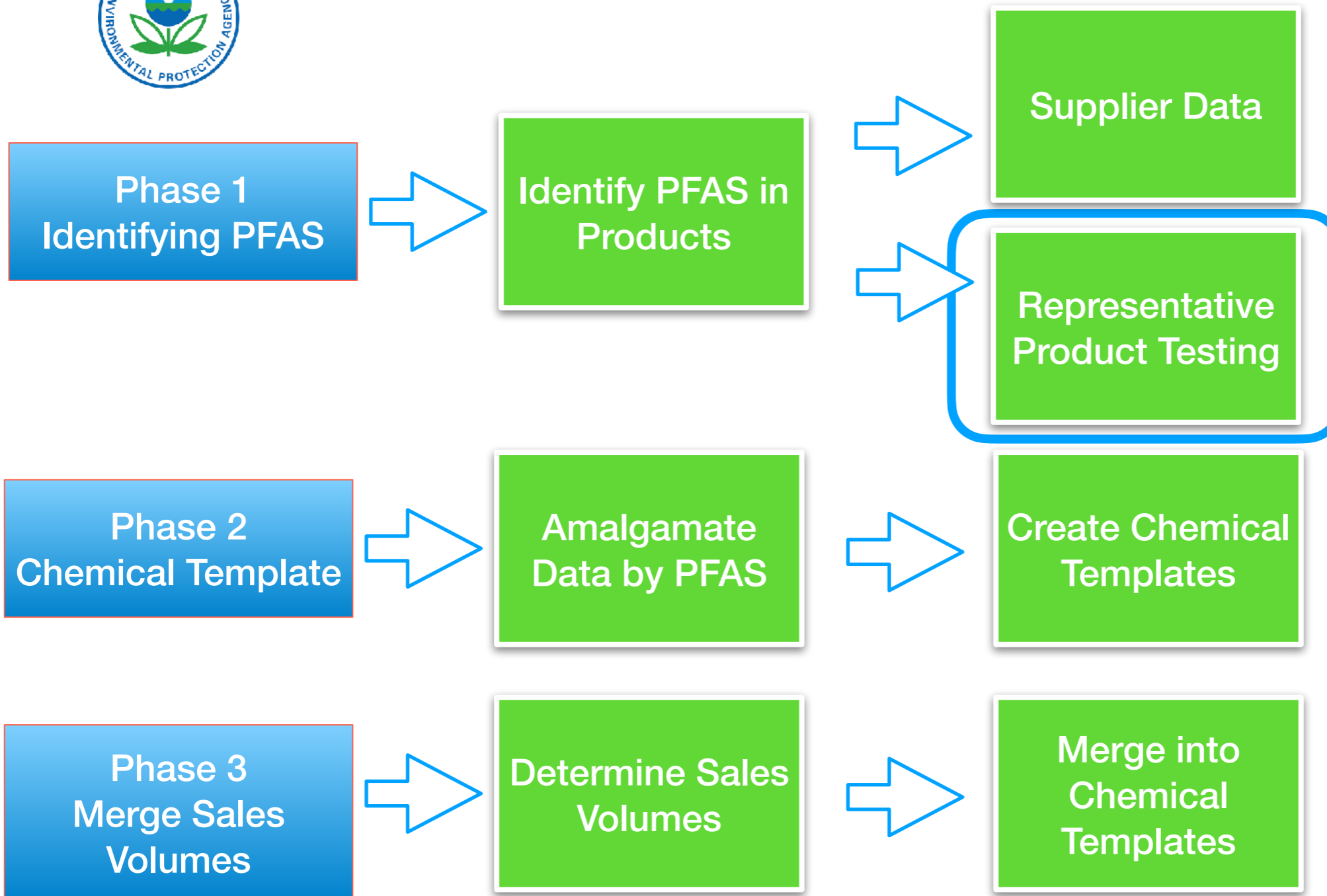
- [Companies must report](#) PFAS imported into or manufactured in the US
 - Back to 2011
- Deadline
 - **May 8 2025**
 - If > 120M in sales in US (including parent company)
 - **November 12 2025**
 - If < 120M in sales in US (including parent company)



US TSCA PFAS Reporting

- PFAS reporting requirement is for ‘chemical substances’
 - “*requiring persons that manufacture (including import) or have manufactured these **chemical substances***”
- **Chemical substances** not regulated or excluded by TSCA include:
 - Pesticides regulated by FIFRA
 - Tobacco and tobacco products regulated by ATF
 - Radioactive materials regulated by NRC
 - Foods, food additives, drugs, cosmetics or **devices** regulated by FDA
- Medical devices can report as ‘non-TSCA’ applications but are not required to

US TSCA PFAS Reporting



Chemical	PTFE	Fluoroelastomer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoralkoxy alkane
Generic Name	PTFE	FKM	PFA
Cas number	9002-84-0	9011-17-0	28665-00-6
Concentration in product	<0.1%	0.1% to 1%	0.1% to 1%
Process or Use Operation	U - Use - non-incorporative...	U - Use - non-incorporative...	U - Use - non-incorporative...
Industrial Sector (IS)	IS42 - Electrical equipment...	IS42 - Electrical equipment...	IS42 - Electrical equipment...
Product Category Codes	CC219 - Machinery, mecha...	CC219 - Machinery, mecha...	CC219 - Machinery, me...
Function 1	F034 - Insulators	F008 - Sealant (barrier)	F034 - Insulators
% 1	50%	100%	100%
Function 2	F029 - Flame retardant		
% 2	25%	0	0
Function 3	F041 - Lubricating Agent		
% 3	20%	0	0
Function 4	F006 - Sealant (barrier)		
% 4	5%	0	0

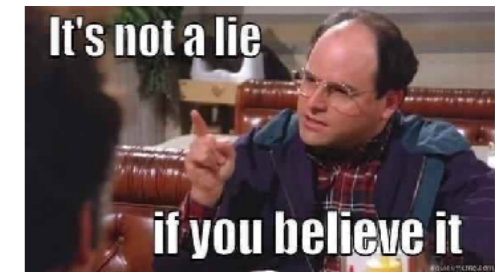
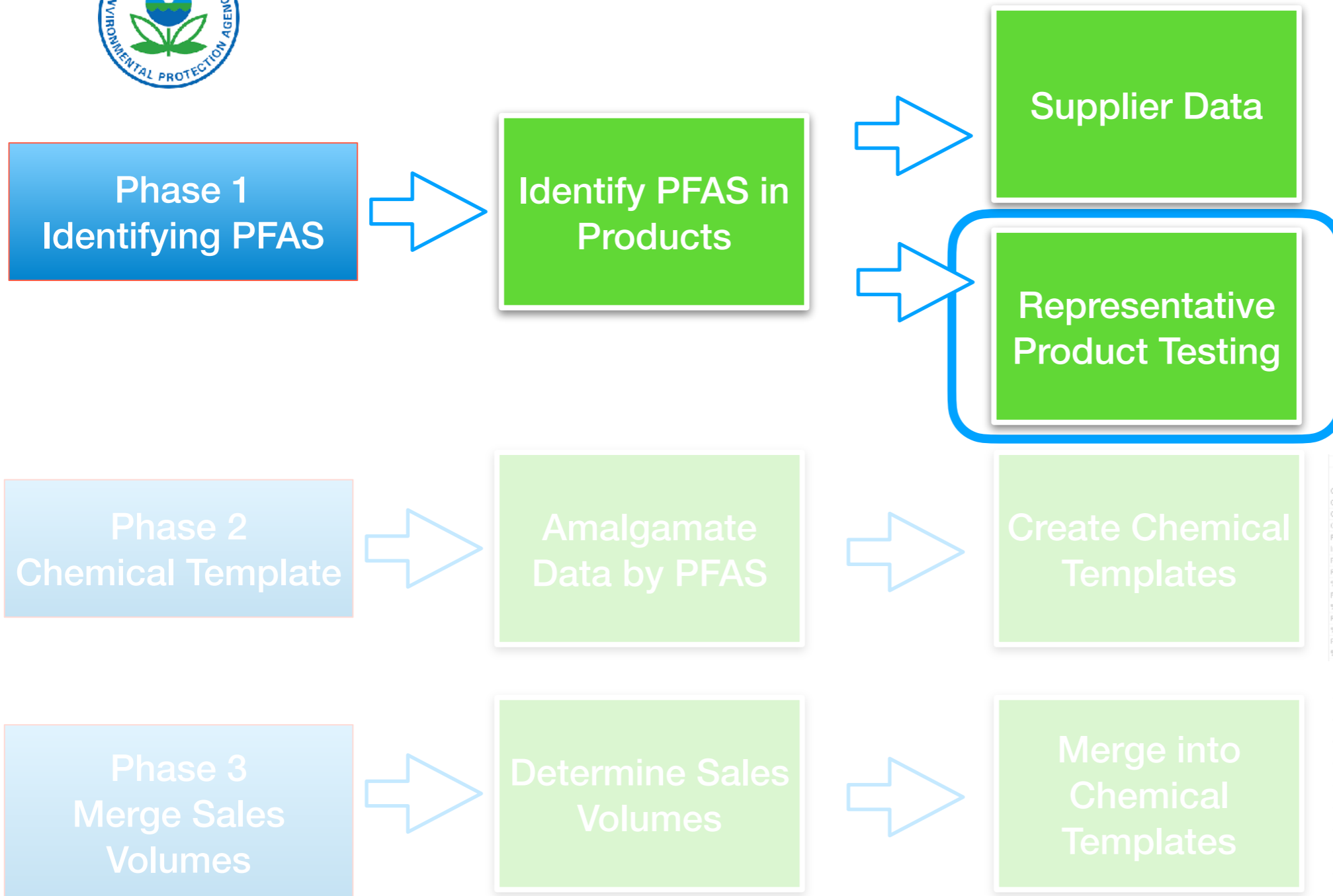
Function 3	F041 - Lubricating Agent	
% 3		20%
Function 2	F006 - Sealant (barrier)	
% 4		5%
Total %		100%
Units Volume	# of Units	
	2011	2750
	2012	2975
	2013	3218
	2014	3478
	2015	3756

Article Manufacturers

- **Streamlined form**
 - No worker safety reporting
 - No byproducts reporting
 - Allowed to point to duplicate results
- **Common approach**
 - Conduct work at operating company / division level
 - Report at operating company / division level
 - Identify in consolidated report
 - Covers all imports of company products
- If there is an issue, each importing site can create a CDX report that points to the consolidated report

US TSCA PFAS Reporting

Phase I - Identifying PFAS in Products



Chemical	PTFE	Fluoroelastomer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoropolyalkane
Generic Name	PTFE	FKM	PFA
Cas number	9022-84-0	6911-17-0	28655-00-6
Concentration in product	<0.1%	0.1% to 1%	0.1% to 1%
Process or Use Operation	U - Use - non-incorporative...	U - Use - non-incorporative...	U - Use - non-incorporative...
Industry Sector (IS)	IS42 - Electrical equipment...	IS42 - Electrical equipment...	IS42 - Electrical equipment...
Product Category Codes	CC219 - Machinery, mecha...	CC219 - Machinery, mecha...	CC219 - Machinery, me...
Function 1	F034 - Insulators	F005 - Sealant (barrier)	F034 - Insulators
% 1		50%	100%
Function 2	F029 - Flame retardant		
% 2		25%	0
Function 3	F041 - Lubricating Agent		
% 3		20%	0
Function 4	F006 - Sealant (barrier)		
% 4		5%	0

Function 3	F041 - Lubricating Agent	
% 3		20%
Function 2	F006 - Sealant (barrier)	
% 4		5%
Total %		100%
Units Volume	# of Units	
2011		2750
2012		2975
2013		3218
2014		3478
2015		3756

Representative Product Testing

- **Claigan Process**
 - Choose representative product from each product line
 - Test representative product
 - Create chemical template for representative product
- **Why?**
 - Way more accurate than supplier data
 - Lower effort than supplier data
 - Faster with time certainty
 - Data is consistent and easier to merge into chemical templates
 - Easiest to process for federal or state requirements

Electronic Components

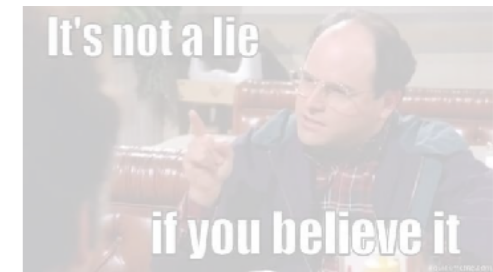
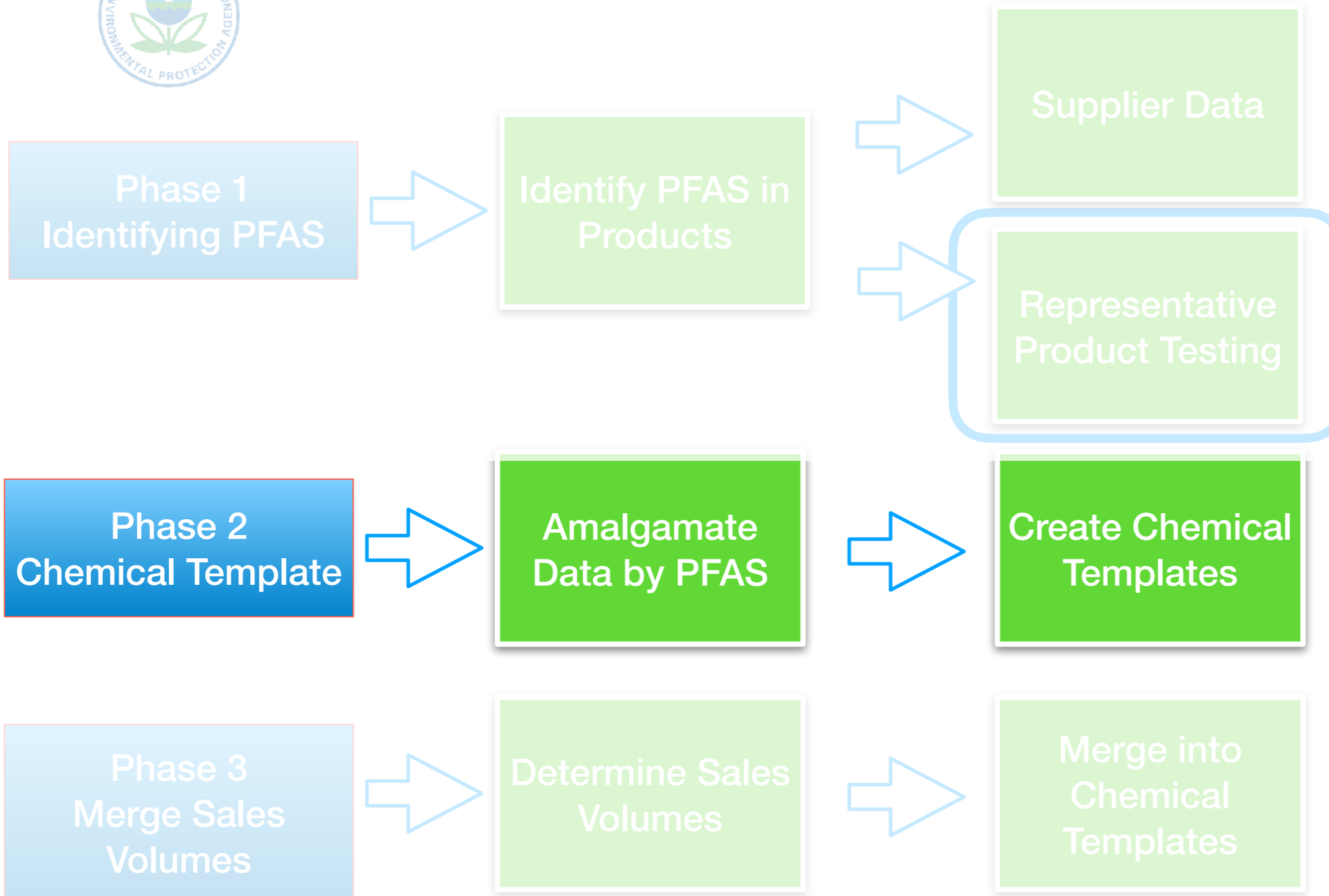
- **Claigan Process**

- Combine
 - Manufacturer Data
 - Representative testing

- **Why?**

- Component manufacturers often have a combination of
 - Detailed information on specific products, and
 - Very little information on other products
- Duplicate information is not terribly useful for reporting
- Some PFAS uses are obvious from manufacturing
- # and weights are very misleading for components suppliers

US TSCA PFAS Reporting Phase 2 - Chemical Template



Chemical	PTFE	Fluoropolymer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoralkoxy alkane
Generic Name	PTFE	FKM	PFA
Cas number	9002-84-0	9011-17-0	28665-00-5
Concentration in product	<0.1%	0.1% to 1%	0.1% to 1%
Process or Use Operation	U - Use - non-incorporative...	U - Use - non-incorporative...	U - Use - non-incorporative...
Industrial Sector (IS)	IS42 - Electrical equipment...	IS42 - Electrical equipment...	IS42 - Electrical equipment...
Product Category Codes	OC219 - Machinery, mecha...	OC219 - Machinery, mecha...	OC219 - Machinery, me...
Function 1	F034 - Insulators	F005 - Sealant (barrier)	F034 - Insulators
% 1	50%	100%	100%
Function 2	F029 - Flame retardant		
% 2	25%	0	0
Function 3	F041 - Lubricating Agent		
% 3	20%	0	0
Function 2	F006 - Sealant (barrier)		
% 4	5%	0	0

Function 3	F041 - Lubricating Agent	
% 3		20%
Function 2	F006 - Sealant (barrier)	
% 4		5%
Total %		100%
Units Volume	# of Units	
	2011	2750
	2012	2975
	2013	3218
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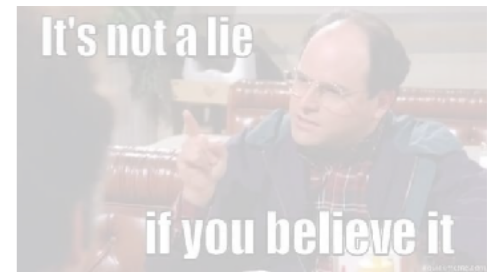
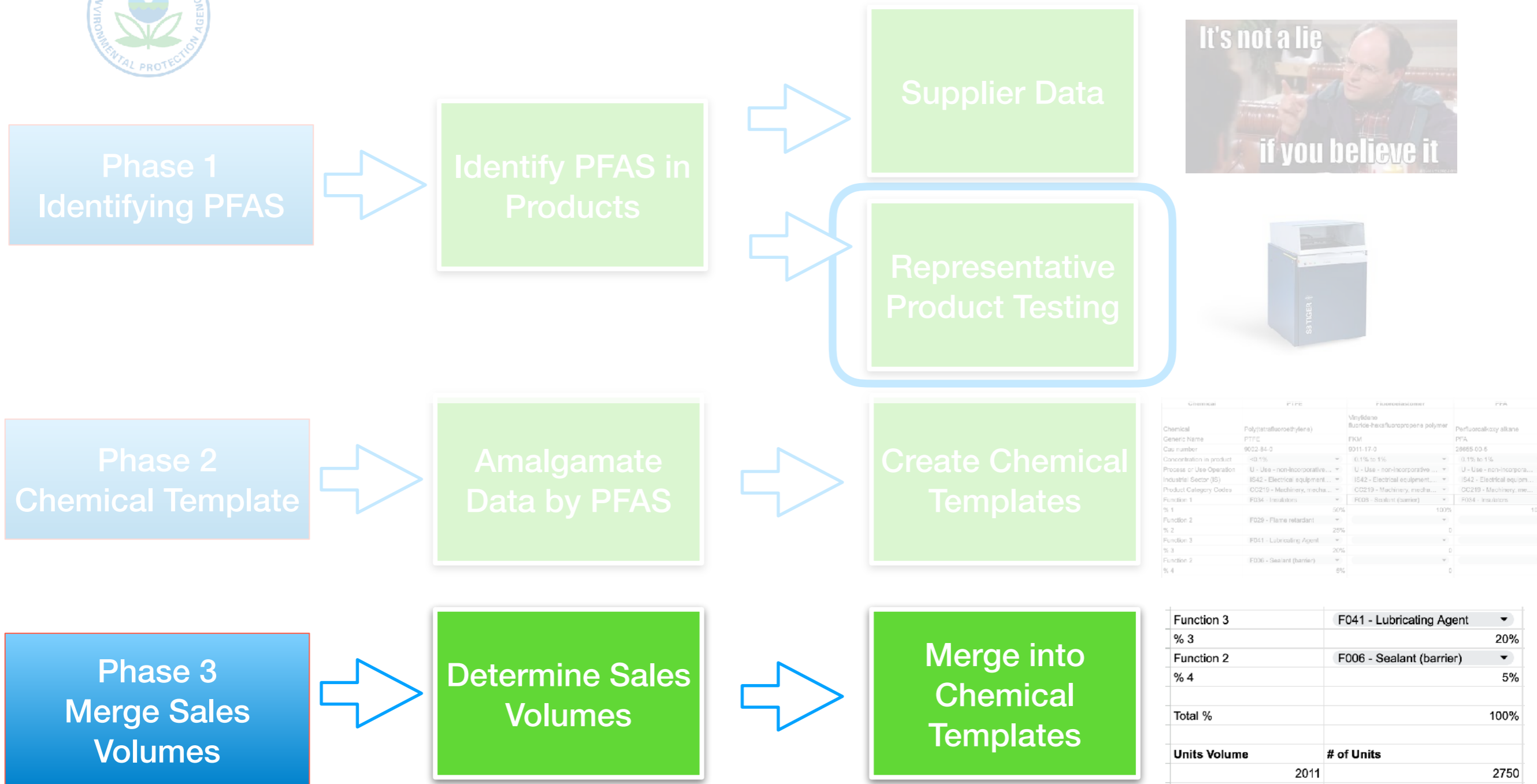
Phase 2 - PFAS Chemical Template

- **Chemical template**
 - US TSCA Reporting is by chemical
 - Not product
 - Claigan creates a reporting template for each reportable PFAS

Chemical	PTFE	Fluoroelastomer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoroalkoxy alkane
Generic Name	PTFE	FKM	PFA
Cas number	9002-84-0	9011-17-0	26655-00-5
Concentration in product	<0.1% ▼	0.1% to 1% ▼	0.1% to 1% ▼
Process or Use Operation	U - Use - non-incorporative... ▼	U - Use - non-incorporative ... ▼	U - Use - non-incorpora... ▼
Industrial Sector (IS)	IS42 - Electrical equipment... ▼	IS42 - Electrical equipment,... ▼	IS42 - Electrical equipm... ▼
Product Category Codes	CC219 - Machinery, mecha... ▼	CC219 - Machinery, mecha... ▼	CC219 - Machinery, me... ▼
Function 1	F034 - Insulators ▼	F006 - Sealant (barrier) ▼	F034 - Insulators ▼
% 1	50%	100%	100%
Function 2	F029 - Flame retardant ▼	▼	▼
% 2	25%	0	0
Function 3	F041 - Lubricating Agent ▼	▼	▼
% 3	20%	0	0
Function 2	F006 - Sealant (barrier) ▼	▼	▼
% 4	5%	0	0

US TSCA PFAS Reporting

Phase 2 - Merging Sales Volumes



Chemical	PTFE	Fluoropolymer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoropolyalkane
Generic Name	PTFE	FKM	PFA
Cas number	9022-84-0	6911-17-0	28855-00-6
Concentration in product	<0.1%	0.1% to 1%	0.1% to 1%
Process or Use Operation	U - Use - non-incorporative...	U - Use - non-incorporative...	U - Use - non-incorporative...
Industry Sector (IS)	IS42 - Electrical equipment...	IS42 - Electrical equipment...	IS42 - Electrical equipment...
Product Category Codes	OC219 - Machinery, mecha...	OC219 - Machinery, mecha...	OC219 - Machinery, me...
Function 1	F034 - Insulators	F005 - Sealant (barrier)	F034 - Insulators
% 1		50%	100%
Function 2	F029 - Flame retardant		
% 2		25%	0
Function 3	F041 - Lubricating Agent		
% 3		20%	0
Function 4	F006 - Sealant (barrier)		
% 4		5%	0

Function 3	F041 - Lubricating Agent	
% 3		20%
Function 2	F006 - Sealant (barrier)	
% 4		5%
Total %		100%
Units Volume	# of Units	
	2011	2750
	2012	2975
	2013	3218
	2014	3478
	2015	3756

Phase 3 - Merging Sales Volumes

- **Merging Sales Volumes**
 - Mapping of products lines to chemical templates
 - Adding sales volumes to 2011 by product line
 - Generating final reporting numbers
 - In # of units or kg (lb)

Product Family 1	100%
Product Family 2	100%
Product Family 3	0%
Product Family 4	75%
# of units	
Consumer	Commercial
Intended for Children	No
Chemical	PTFE
Chemical	Poly(tetrafluoroethylene)
Generic Name	PTFE
Cas number	9002-84-0
Concentration in product	<0.1%
Process or Use Operation	U - Use - non-incorporative...
Industrial Sector (IS)	IS42 - Electrical equipment...
Product Category Codes	CC219 - Machinery, mecha...
Function 1	F034 - Insulators
% 1	50%
Function 2	F029 - Flame retardant
% 2	25%
Function 3	F041 - Lubricating Agent
% 3	20%
Function 2	F006 - Sealant (barrier)
% 4	5%
Total %	100%
Units Volume	# of Units
2011	2750
2012	2975
2013	3218
2014	3478
2015	3756
2016	4053
2017	4369

Phase 3 - Merging Sales Volumes

- **Product family**
 - Mapping of products lines to chemical templates
 - % of each products in product line that contain PFAS

Product Family 1	100%
Product Family 2	100%
Product Family 3	0%
Product Family 4	75%
# of units	
Consumer	Commercial
Intended for Children	No
Chemical	PTFE
Chemical	Poly(tetrafluoroethylene)
Generic Name	PTFE
Cas number	9002-84-0

Phase 3 - Merging Sales Volumes

- **Sales Volumes**
 - Client products sales volumes per product line
 - # of units sold
 - *Can be approximated by \$ of sales / average value of sale*

Year	Product Family 1	Product Family 2	Product Family 3	Product Family 4
2011	1000	1000	500	1000
2012	1200	1100	550	900
2013	1400	1210	605	810
2014	1600	1331	666	729
2015	1800	1464	733	656
2016	2000	1610	806	590
2017	2200	1771	887	531
2018	2400	1948	976	478
2019	2600	2143	1074	430
2020	2800	2357	1181	387
2021	3000	2593	1299	348
2022	3200	2852	1429	313

Phase 3 - Merging Sales Volumes

- **Final volumes**
 - # of units or kg (lb)
 - Per PFAS
 - For each year
- *Chemical template includes weight to unit conversion for each PFAS*

Units Volume	# of Units
2011	2750
2012	2975
2013	3218
2014	3478
2015	3756
2016	4053
2017	4369
2018	4707
2019	5066
2020	5447
2021	5854
2022	6287
Tonnage volume	kg
2011	1650
2012	1785
2013	1930.5
2014	2086.7
2015	2253.6
2016	2431.5
2017	2621.6
2018	2823.9
2019	3039.3
2020	3268.4
2021	3512.4
2022	3772.1

PFAS weight to unit conversion in chemical template

Weight (kg)	
Function 1	0.6
Function 2	0.0125
Function 3	0.0052
Function 4	0.02
Mass per product (kg)	0.6377

Final - Data to Submit

- **Data to Submit**
 - Per chemical
 - Chemical name
 - CAS number
 - Max concentration in product
 - Product or Use
 - Industrial Sector
 - Product Category Codes
 - Function(s)
 - % of chemical use is each function
 - # of units, or
 - Tonnage

Chemical	PTFE
Chemical	Poly(tetrafluoroethylene)
Generic Name	PTFE
Cas number	9002-84-0
Concentration in product	<0.1%
Process or Use Operatic	U - Use - non-incor...
Industrial Sector (IS)	IS42 - Electrical eq...
Product Category Codes	CC219 - Machiner...
Function 1	F034 - Insulators
% 1	50%
Function 2	F029 - Flame retardant
% 2	25%
Function 3	F041 - Lubricating Agent
% 3	20%
Function 2	F006 - Sealant (barrier)
% 4	5%
Total %	100%
Units Volume	# of Units
2011	2750
2012	2975
2013	3218
2014	3478
2015	3756
2016	4053
2017	4369
2018	4707
2019	5066
2020	5447
2021	5854
2022	6287
Tonnage volume	kg
2011	1650
2012	1785
2013	1930.5
2014	2086.7
2015	2253.6
2016	2431.5
2017	2621.6

PFAS

- **2025**
 - In scope
 - EU PFOA/LC-PFCA Restriction (REACH and POP) (*current*)
 - US TSCA PFAS Reporting
 - Australia PFOA/LC-PFCA Restriction
 - *Canadian PFAS reporting (Section 71) - expected*
 - Out of scope
 - Maine PFAS reporting (except consumer products)

Do Not Forget

- **2025**
 - In scope
 - EU PFOA/LC-PFCA Restriction (REACH and POP) (*current*)
 - US TSCA PFAS Reporting
 - Australia PFOA/LC-PFCA Restriction
 - *Canadian PFAS reporting (Section 71) - expected*
 - **Canadian Plastics Registry**
 - Out of scope
 - Maine PFAS reporting (except consumer products)

Claigan Environmental Upcoming Webinars

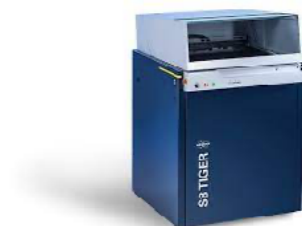
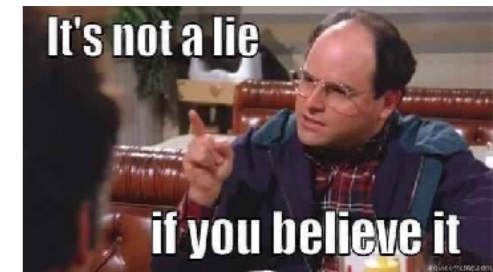
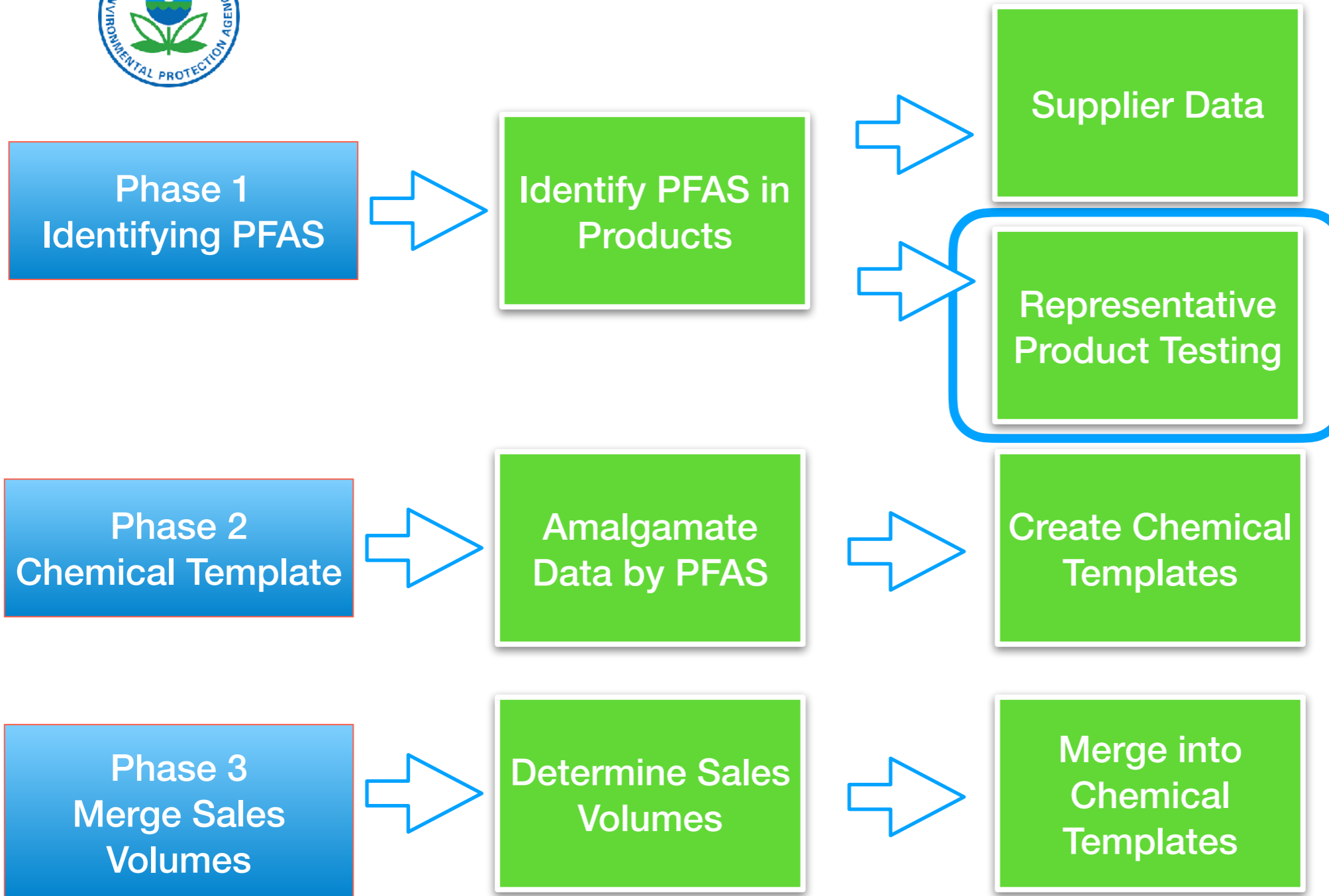


- **WHERE ARE ALL THE PFAS REGULATIONS AT TODAY?**
 - *Update on the fluid situation of PFAS regulation*
 - May 1 2024

- **CANADIAN PLASTICS REGISTRY**
 - *2025 Deadline for Reporting Plastics in Electronics and Packaging*
 - May 8 2024

- <https://www.claigan.com/webinars/>

US TSCA PFAS Reporting



Chemical	PTFE	Fluoroelastomer	PFA
Chemical	Poly(tetrafluoroethylene)	Vinylidene fluoride-hexafluoropropene polymer	Perfluoralkoxy alkane
Generic Name	PTFE	FKM	PFA
Cas number	9002-84-0	9011-17-0	28665-00-6
Concentration in product	<0.1%	0.1% to 1%	0.1% to 1%
Process or Use Operation	U - Use - non-incorporative...	U - Use - non-incorporative...	U - Use - non-incorporative...
Industrial Sector (IS)	IS42 - Electrical equipment...	IS42 - Electrical equipment...	IS42 - Electrical equipment...
Product Category Codes	CC219 - Machinery, mecha...	CC219 - Machinery, mecha...	CC219 - Machinery, me...
Function 1	F034 - Insulators	F008 - Sealant (barrier)	F034 - Insulators
% 1	50%	100%	100%
Function 2	F029 - Flame retardant		
% 2	25%	0	0
Function 3	F041 - Lubricating Agent		
% 3	20%	0	0
Function 2	F006 - Sealant (barrier)		
% 4	5%	0	0

Function 3	F041 - Lubricating Agent	
% 3		20%
Function 2	F006 - Sealant (barrier)	
% 4		5%
Total %		100%
Units Volume	# of Units	
	2011	2750
	2012	2975
	2013	3218
	2014	3478
	2015	3756

Q&A