PFAS Regulatory Landscape

Gene Smith
April 2025

Safety. Science. Transformation.™

About Gene

Gene Smith

Public Policy Issues Management Lead (Sustainability)
UL Solutions

- Worked on the UL Solutions Global Public Affairs team since July 2022.
- Leads the development of global policy positions and tracks relevant international regulations and policies concerning sustainability.
- Worked at UL Solutions for 15+ years in various commercial roles in the sustainability and retail spaces, helping customers with voluntary initiatives and regulatory compliance.
- Understanding typical challenges and a broad array of our service offerings, he navigates and advises the organization on potential impacts and opportunities arising from government policies.
- Earned his bachelor’s and master's degrees in civil environmental engineering from the Georgia Institute of Technology.

About Rajan

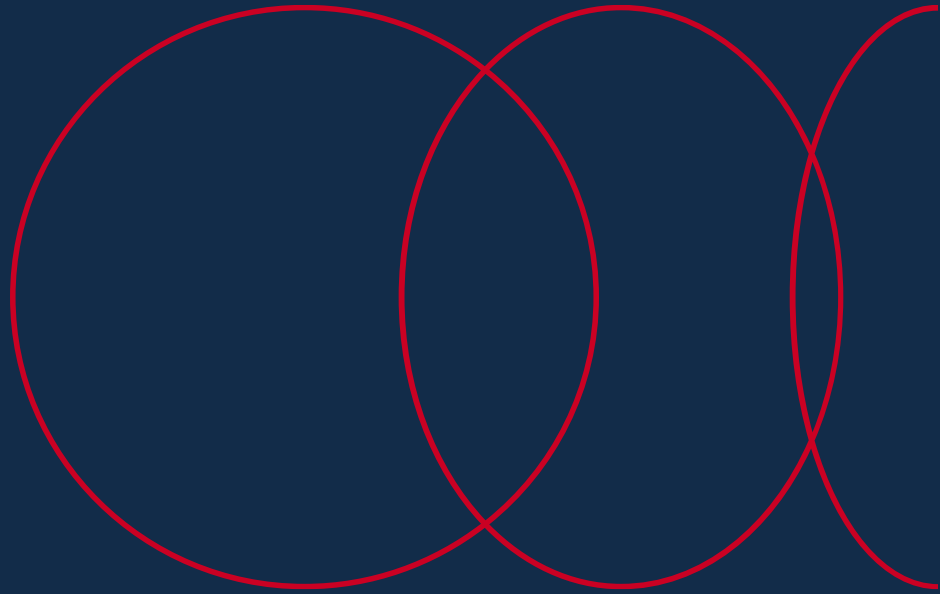
Rajan Thangaraj,
Product Manager
UL Solutions

- Over 20 years of experience handling industry regulatory aspects and has worked as the global product manager at the UL Solutions Netherlands location since January 2024.
- Leads new initiatives, drives business in plastics and engineered materials, and leads the sustainability aspects and initiatives across plastics, wire and cable.
- Laised with and participated in European and international organizations — including UL Solutions, International Electrotechnical Commission (IEC) and European Committee for Standardization (CEN) — in developing and advocating for codes, standards and regulations that help drive the specification of materials in regulated and standardized markets.
- Rajan holds a master's degree in polymer technology from the University of Mysuru, India, and a post-graduate diploma in plastics engineering from the Central Institute of Petrochemicals Engineering and Technology, India.

Agenda

1. Current PFAS regulatory actions across the world
2. How UL 746, the Standard for Polymeric Materials — Use in Electrical Equipment Evaluations, defines non-fluorine and non-PFAS containing materials
3. The benefits of obtaining non-PFAS ratings in our Yellow Card program

PFAS Overview

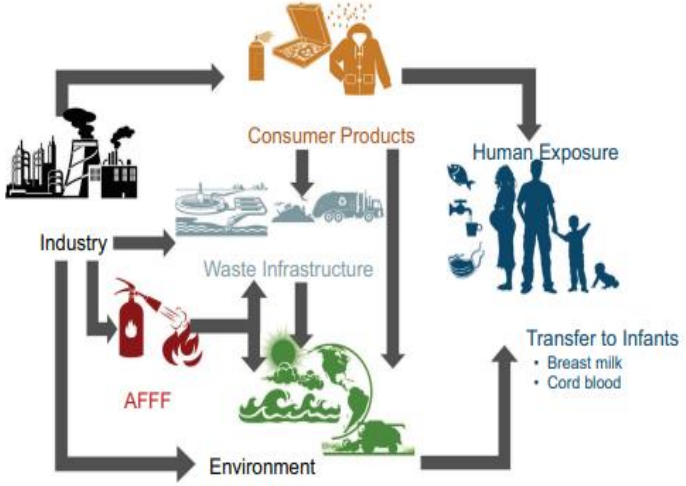


Reasons PFAS have been banned

PFAS are persistent, toxic and bioaccumulative substances with multiple adverse effects on human health. Distinguishing markers of PFAS are:

- **Persistent** – Chemicals that do not easily degrade in the environment; they remain in the enviroment for an unknown length of time and take many years to leave the body
- **Bioaccumulative** – Chemicals that are not water soluble and build up in an individual organism, especially by cell absorption and accumulation in the fat tissue (as animal studies have shown)
- **Toxins** – Chemicals that are deadly or cause irreparable harm on ingestion or contact; toxicity may cause cancer, physical or behavioral reproductive harm, damage to the endocrine and nervous systems, among other conditions

Impact on human health: Adverse health impacts associated with PFAS include kidney and liver damage, decreased immune system function, interference with vaccine uptake, developmental and reproductive harm, increased risk of asthma, and increased incidences of testicular and kidney cancer for those with high exposure.



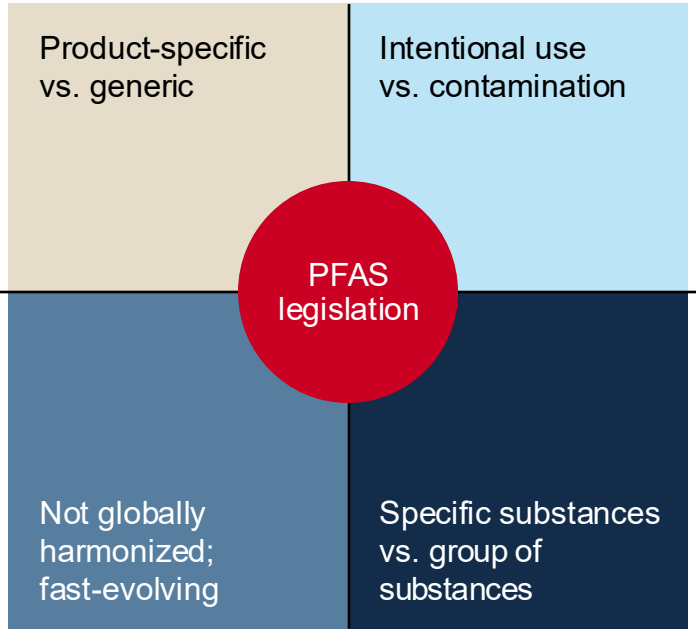
A review of the pathways of human exposure to poly- and perfluoroalkyl substances (PFASs) and present understanding of health effects (harvard.edu)

Common PFAS-containing categories

- Children’s products and toys
- Cleaning products
- Cosmetics and personal care products
- Firefighting foams
- Food packaging and cookware
- Health articles (floss and menstrual products)
- Packaging
- Pesticides
- **Polymers/plastics**
- Textiles (apparel, home furnishings, rugs/carpet, upholstered furniture)

PFAS regulatory landscape

- Fabric treatment
- Mixtures and articles
- Carpets and rugs
- Cookware



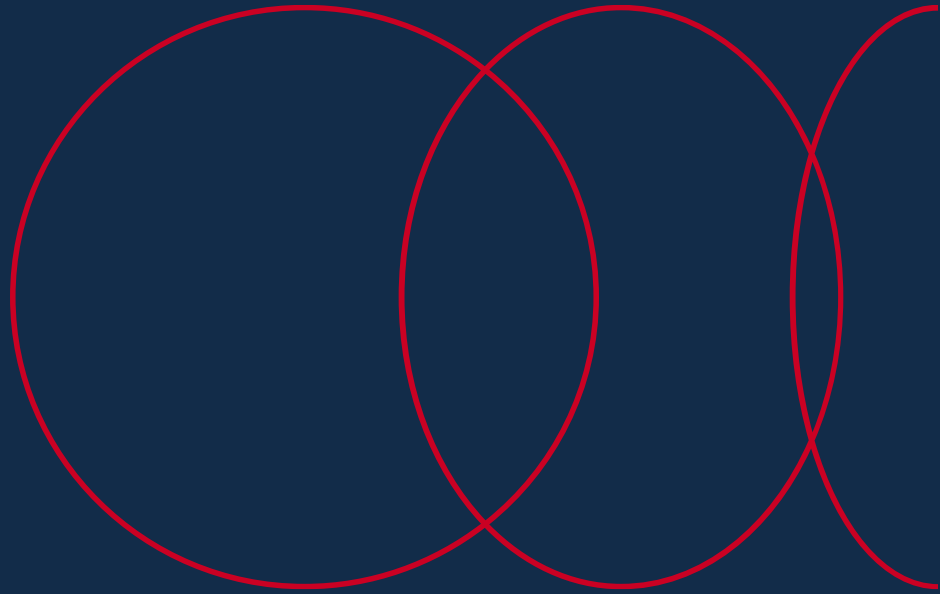
- Shall not be intentionally used
- 25 ppb for any PFAS
- 250 ppb for the sum of PFAS
- 50 ppm total fluorine (TF)
- 100 ppm total organic fluorine (TOF)

- Columbia, EU, Germany, Hong Kong, Japan, Thailand, Taiwan, etc.
- U.S.
  - Twenty-five states have adopted various policies specific to PFAS
  - Twenty-five states with 197 bills specific to PFAS, some of which may impact consumers
- U.S. federal initiative to control PFAS

EU
- Proposed restriction for PFAS, PFHxA[1]
- Restrictions for PFOA[2], PFOS[3], PFCA[4], PFHxS[5]

1Perfluorohexanoic acid (PFHxA)
2Perfluorooctanoic acid (PFOA)
3Perfluorooctane sulfonic acid (PFOS)
4Perfluoroalkyl carboxylic acid (PFCA)
5Perfluorohexane sulfonate (PFHxS)

Canada



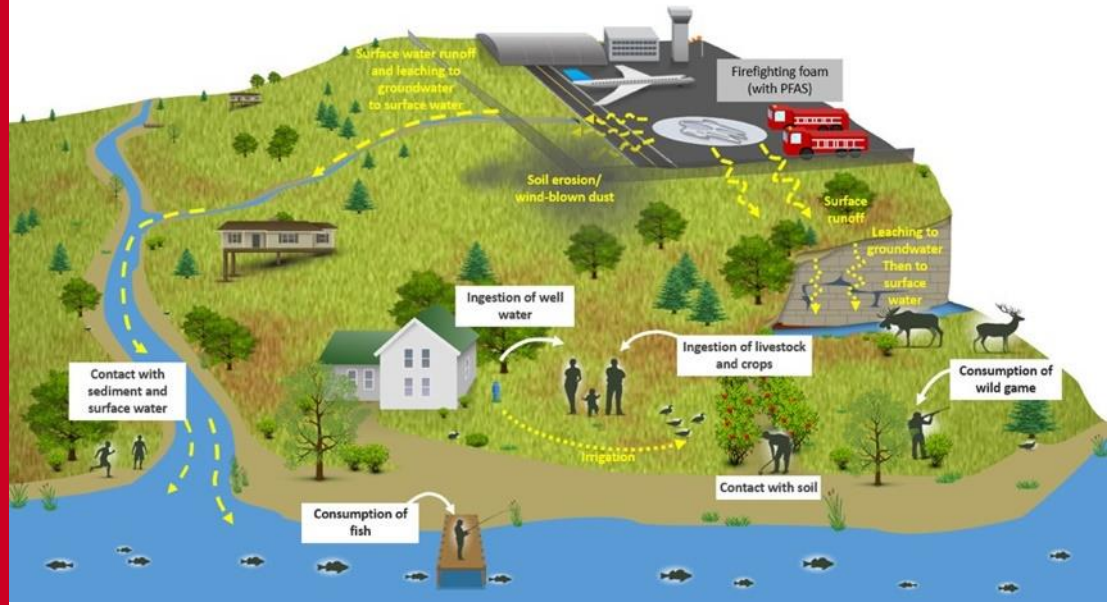
Canada: Prohibition of Certain Toxic Substances Regulations

- In May 2022, the Canadian government issued proposed changes to the regulations.
- The proposed regulations repeal several exemptions currently available for:
  - Perfluorooctane sulfonate (PFOS), its salts and its precursors
  - Perfluorooctanoic acid (PFOA), its salts and its precursors
  - Long-chain perfluorocarboxylic acids (LC-PFCAs), their salts and their precursors
- The final regulation was anticipated in the fall of 2024 but still has not been released.

Final state of PFAS report

- Final report released in March 2025
- Class-based approach favored for preventive and mitigative action
- “Fluorinated substances that contain at least one fully fluorinated methyl or methylene carbon atom (without any hydrogen, chlorine, bromine or iodine atoms bonded to it)”[1]
- PFAS (excluding fluoropolymers) meet criteria for addition to Schedule 1 of CEPA
- Fluoropolymers to be assessed separately

[1] State of per- and polyfluoroalkyl substances (PFAS) report - Canada.ca



This image is a copy of Figure 2: Conceptual site model for a PFAS-impacted contaminated site due to historical AFFF use, and associated human health exposure pathways to be assessed in a human health risk assessment, available at Draft state of per- and polyfluoroalkyl substances (PFAS) report - Canada.ca

Canada's PFAS risk management strategy

Collection of PFAS information under CEPA section 71

Activities

Manufacture

Import

Used during the manufacture

Type of material

Substance

Mixture

Products

Manufactured item

Description and application of goods

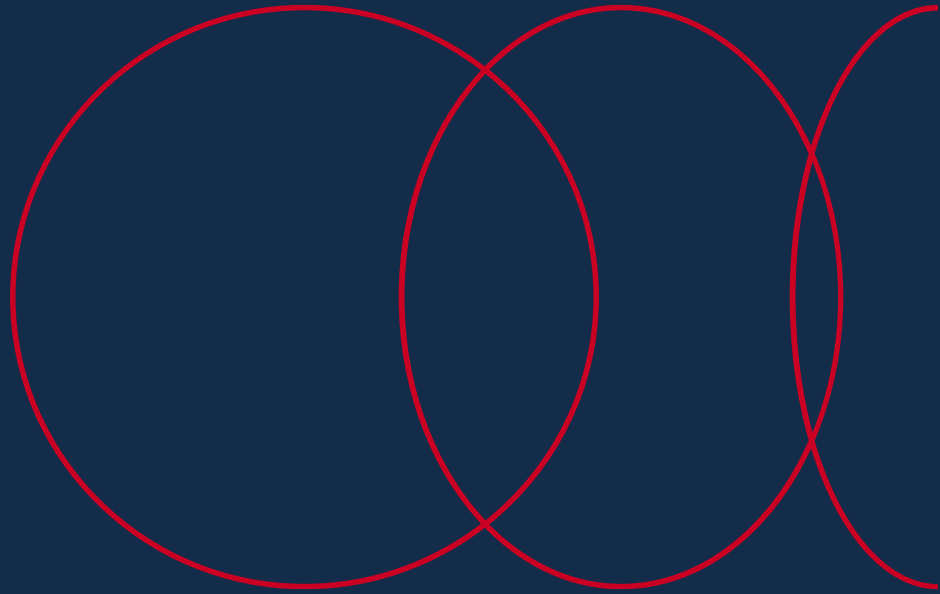
Other data

Facilities

Quantities manufactured, imported, exported, and used

Functions of the substances

European Union



PFAS regulated in EU in articles

Substance group	Limits in articles	Applicable from
PFOA and PFOA-related substances	25 ppb as total content and 1000 ppb for PFOA-related substances	July 4, 2020
PFOS	1 microg/m^2 for treated articles and 0.1% by weight as total content	Aug. 25, 2010
PFCAs and PFCA-related substances	25 ppb for the sum of C9-C14 PFCAs and their salts or 260 ppb for the sum of C9-C14 PFCA-related substances	Feb. 25, 2023
PFHxS and PFHxS-related substances	25 ppb for the sum of PFHxS and their salts or 1,000 ppb for the sum of PFHxS -related substances	Aug. 28, 2023
PFHxAs and PFHxA-related substances	25 ppb for the sum of PFHxA and their salts or 1,000 ppb for the sum of PFHxA -related substances	Oct. 10, 2026, in textiles, leather, furs and hides in clothing and related accessories for the general public Oct. 10, 2027, in textiles, leather, furs and hides other than in clothing and related accessories

New

PFAS under proposal in EU in articles

Substance group	Limits in articles
PFOS and PFOS-related substances	25 ppb for the sum of PFOS and their salts, or 1,000 ppb for the sum of PFOS-related substances
All PFAS	• 25 ppb for any PFAS as measured with targeted PFAS analysis (polymeric PFAS excluded from quantification) • 250 ppb for the sum of PFAS measured as sum of targeted PFAS analysis, optionally with prior degradation of precursors (polymeric PFAS excluded from quantification) • 50 ppm for PFASs measured as TF (polymeric PFASs included) If TF exceeds 50 mg F/kg, the manufacturer, importer or downstream user shall provide proof of the fluorine measured as content of either PFAS or non-PFAS to the enforcement authorities upon request.

Existing EU Regulation of PFAS

- Stockholm Convention on Persistent Organic Pollutants (POPs)
  - Forbids use of PFOS, PFOA, PFHxS (included in 2022, formally adopted in May 2023) and related compounds
- Several PFAS on REACH regulation Candidate List
- At a member state level, Denmark and Netherlands's ban on PFAS usage in food contact paper and board
- Firefighting foams containing PFOA were restricted as of 2017 and phase out must be completed by July 4, 2025.

In force beginning of 2023:

- Limits for PFAS compounds in food via Commission Regulation (EU) 2022/2388
- Limits for PFAS in drinking water (effective 2024 with testing guidelines to come) – Directive (EU) 2020/2184

REACH pending updates*

In June 2023, the European Commission submitted a draft to the WTO to amend REACH Annex XVII to add a restriction on PFHxA, its salts and related substances.

Intended scope:

- Textiles, leather, furs, and hides for the general public
- Footwear for the general public
- Paper and board for FCMs in scope of Regulation (EC) 1935/2004
- Mixtures for the general public
- Cosmetic products in scope of Regulation (EC) 1223/2009
- Fire-fighting foams for training, testing, municipal fire services and civil aviation

Proposed limits:

- Sum of PFHxA and its salts < 25 ppb OR
- Sum of PFHxA related substances < 1000 ppb

Proposed dates of application:

- FF foams (except civil aviation): 18 months post entry into force
- Textiles, furs, and hides in clothing and accessories, footwear, paper and board FCM, mixtures for the general public, cosmetic products: 24 months post entry into force
- Textiles, leather, furs and hides in product other than clothing and accessories: 36 months post entry into force
- FF forms for civil aviation: 5 years post entry into force
- *Commission voted in favour in February 2024, and it was published in September of 2024. Earliest provisions go into effect in 2026.*

E.U. PFAS restriction proposal

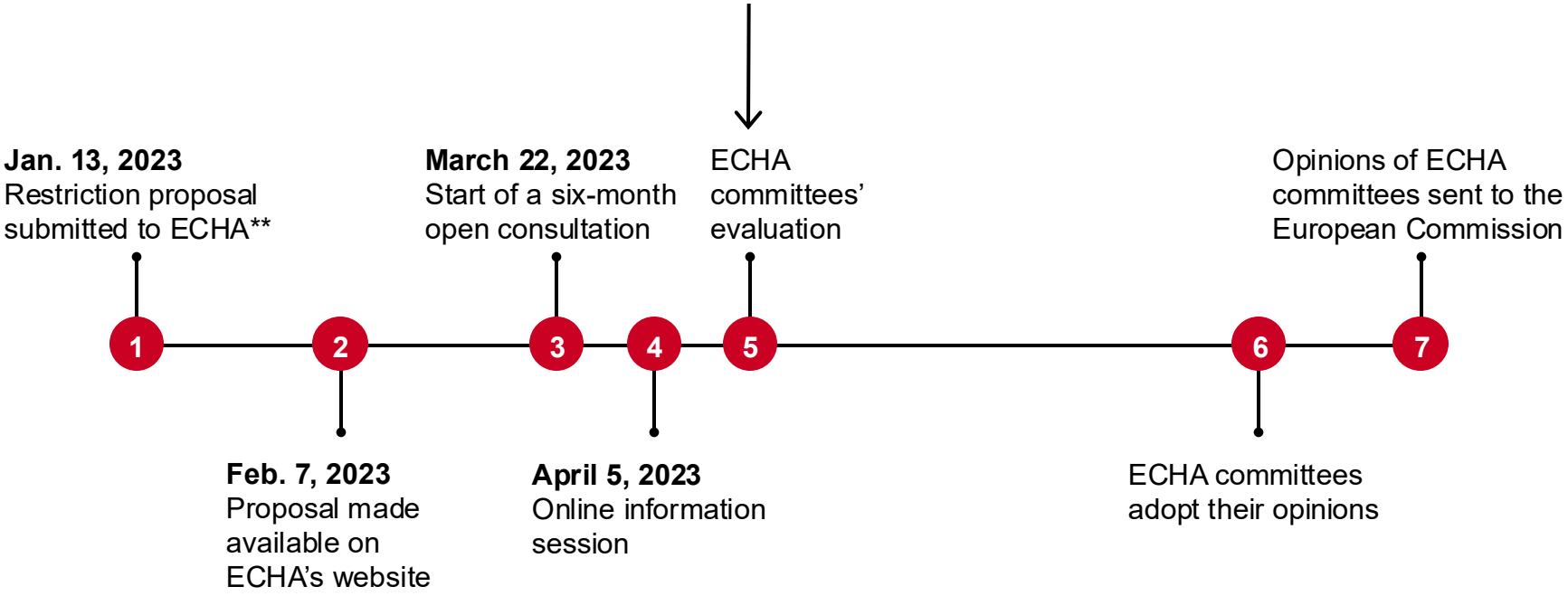
- Formally published by ECHA on Feb. 7, 2023
- Prepared by authorities in Denmark, Germany, Netherlands, Norway and Sweden
- Proposes group restriction of PFAS
- Around 10,000 substances of interest
- Two restriction options proposed
- Derogations are not proposed for most consumer product segments
- 18-month transition period in both paths
- Next steps:
  - Six-month consultation period ended in August 2023
  - ECHA committee evaluation and opinion adoption
  - ECHA opinions sent to European Commission.

E.U. PFAS restriction proposal (cont'd)

- Over 5600 comments received by end of September
- Original 5 national authorities will update their initial report to address consultation comments
- Risk Assessment and Socio-Economic Analysis Committees will keep to the following schedule
- Then will deliver recommendation to ECHA based on updated report and deliver final opinions to European Commission

- March 2024 meetings:
  - Consumer mixtures, cosmetics and ski wax;
  - Hazards of PFAS (only by RAC); and
  - General approach (only by SEAC).
- June 2024 meetings:
  - Metal plating and manufacture of metal products; and
  - Additional discussion on hazards (only by RAC).
- September 2024 meetings:
  - Textiles, upholstery, leather, apparel, carpets (TULAC);
  - Food contact materials and packaging; and
  - Petroleum and mining.
- June 2025 meetings:
  - Medical devices
  - Lubricants
  - Transport
  - Energy
  - Electronics and semiconductors
- After June 2025 meetings:
  - Electronics and semiconductors; and
  - Remaining applications

All PFAS: EU REACH* restriction proposal timeline



*Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
**European Chemicals Agency (ECHA)

EU member state activities

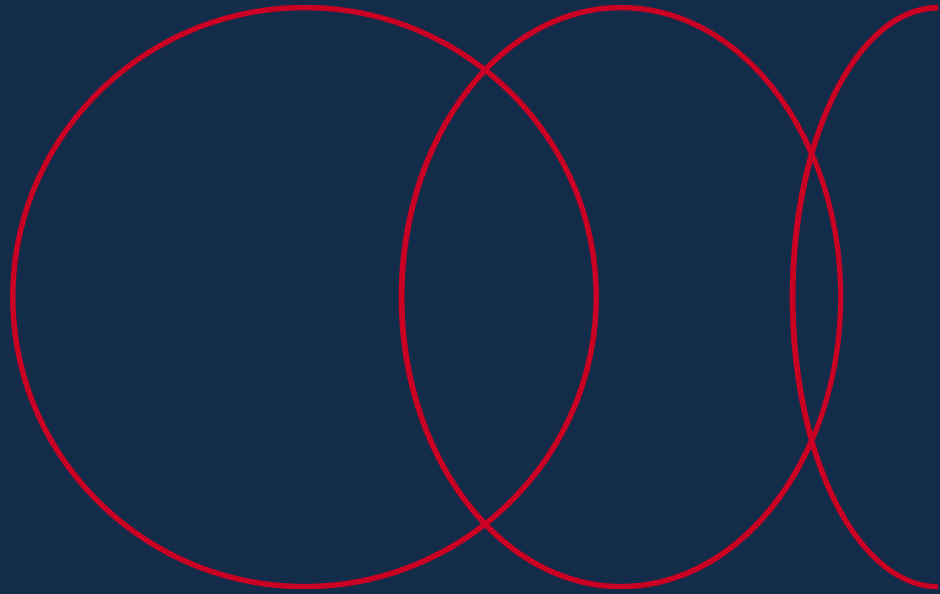
France PFAS Ban

- Law to ban manufacture, import, and sale of products containing PFAS
  - Cosmetics
  - Coating textiles
  - Ski waxes
- Government will publish map of sites that have or are emitting PFAS into environment
- Takes effect Jan. 1, 2026 and expands in 2030 to cover all textiles with exceptions for those ‘contributing to national sovereignty’

Denmark PFAS provisions

- Prohibition on PFAS in paper and board for food contact took effect 2020
- Plans to implement broad ban tentatively eff. July 1, 2026
  - Clothing
  - Shoes
  - Consumer waterproofing agents

United States



United States Environmental Protection Agency (EPA): 2024 key actions

- Final Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) hazardous substances designations for PFOA and PFOS
- National drinking water standards for PFAS
- Updated interim guidance on PFAS destruction and disposal
- Actions to cut PFAS from U.S. government custodial contract
- Proposed Resource Conservation and Recovery Act PFAS – Related rules
- Methods for measuring PFAS in the environment

CERCLA final rule

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) listed as hazardous substances
- Impacts current and former owner/operators of facilities who release or dispose of hazardous waste, and transporters of hazardous waste
- Effective July 8, 2024

RCRA proposed rules

- Resource Conservation Recovery Act (RCRA)
- Two rules issued in Jan. 2024
- Proposal to list nine PFAS as “hazardous constituents” under Appendix VIII C.F.R. Part 261
  - Impacts corrective actions under RCRA
  - EPA estimates up to 1,740 facilities affected
- Proposal to revise definition of “hazardous waste” applied to corrective actions

Overview of TSCA 8(a)(7) reporting and recordkeeping requirements for PFAS

- Scope – PFAS defined as including at least one of the following structures:
  - R-(CF2)-CF(R')R'', where both the CF2 and CF moieties are saturated carbons
  - R-CF2OCF2-R', where R and R' can either be F, O or saturated carbons
  - CF3C(CF3)R'R'', where R' and R'' can either be F or saturated carbons

- Who must report – Any person who has manufactured or imported PFAS or articles containing PFAS between Jan. 1, 2011, and Dec. 21, 2022

- What must be reported
  - Company and plant site information
  - Chemical-specific information
  - Categories of use
  - Manufactured amounts
  - Byproduct reporting
  - Environmental and health effects
  - Worker exposure data
  - Disposal data

Overview of TSCA 8(a)(7) reporting and recordkeeping requirements for PFAS

- Timeframe – July 11, 2025, to July 11, 2026, for small businesses that are subject to reporting based solely on the importation of PFAS-containing articles, and from July 11, 2025, to Jan. 11, 2026, for all others

- Recordkeeping – Five-year recordkeeping period following final date of submission period

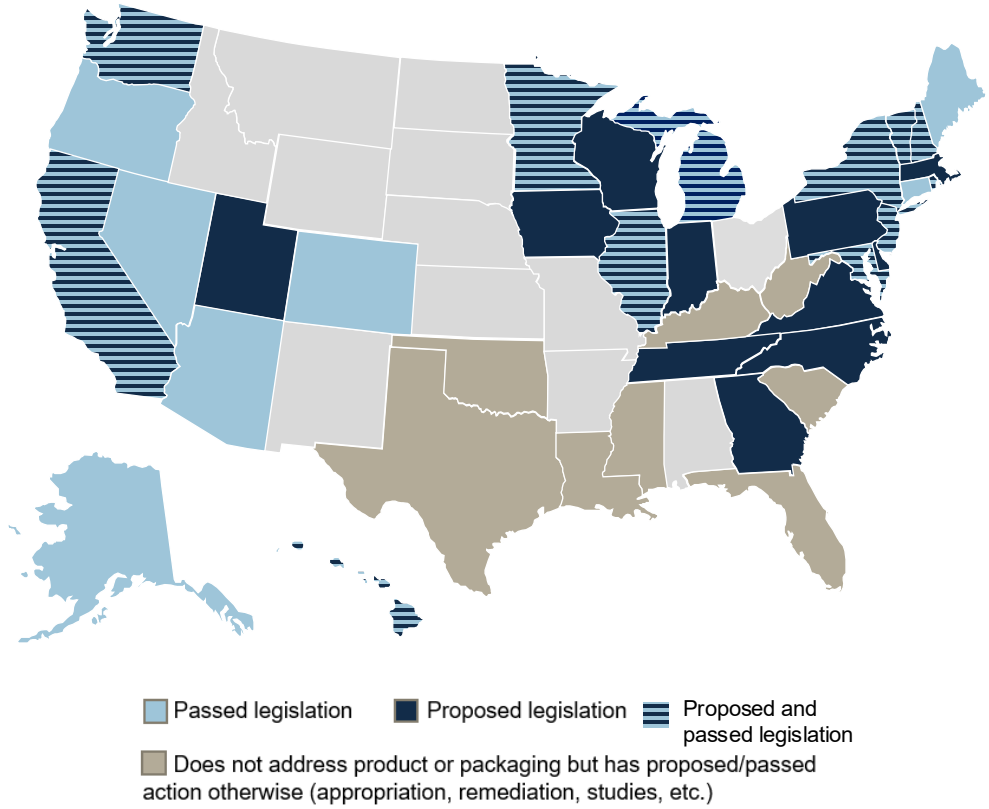
- Notes
  - Information is reported “to the extent known or reasonably ascertainable by the manufacturer”
  - No testing or monitoring is required.
  - Polymers, impurities, R&D, or small businesses not exempt

State action continues

State laws in effect over past year:

- California (cookware and food packaging)
- Colorado (food packaging, children's products, cosmetics)
- Hawaii (food packaging)
- Maryland (food packaging, cosmetics, carpets and rugs)
- Minnesota (food packaging)
- Rhode Island (food packaging)

At least six states have passed legislation coming into force Jan. 1, 2025, impacting broad product categories.



Source: UL Solutions

State laws: Bans on PFAS

Maine Public Law 2023, c. 630

- Any products containing intentionally added PFAS sold in Maine unless the use of PFAS in the product is a currently unavoidable use
- Products that do not contain intentionally added PFAS but that are sold, offered for sale, or distributed for sale in a fluorinated container or in a container that otherwise contains intentionally added PFAS
- **Enforcement Jan. 1, 2032**
  - Prohibited unless currently unavoidable use
- **Enforcement Jan. 1, 2040**
  - Cooling, heating, ventilation, air conditioning or refrigeration equipment
  - Refrigerants, foams or aerosol propellants

Minnesota Chapter 60—HF No. 2310

- Any products containing intentionally added PFAS sold in Minnesota unless the use of PFAS in the product is a currently unavoidable use
- **Enforcement Jan. 1, 2032** – Prohibited if intentionally added (unless the commissioner has determined that the use of PFAS is unavoidable)
- **Enforcement Jan. 1, 2040**

California AB 347

- Focus on PFAS regulations – Targets the presence of PFAS in consumer goods, specifically those products intended for children, textiles and food packaging
- Requires manufacturer registration
  - Must register with the California Department of Toxic Substances Control (DTSC) by July 1, 2029
  - Must provide a statement of compliance certifying that their products meet PFAS restrictions
- Enforcement by DTSC – Responsible for adopting regulations to enforce PFAS restrictions, conducting product testing and issuing notices of violation to noncompliant manufacturers.
- Testing and compliance verification – The DTSC has the authority to randomly select and test products.
- Penalties for violations – Manufacturers found in violation of PFAS regulations may face administrative fines.

Source: https://legiscan.com/CA/text/AB347/id/3023167

Apparel

New York S 6291/A 7063: Adopted Dec. 30, 2022

- Prohibits apparel from containing PFAS as intentionally added chemicals
- PFAS defined as a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom
- “Apparel” is defined as clothing items intended for regular wear or formal occasions, including but not limited to undergarments, shirts, pants, skirts, dresses, overalls, bodysuits, vests, dancewear, suits, saris, scarves, tops, leggings, leisurewear, formal wear, onesies, bibs and diapers.
- Excludes professional uniforms or outerwear intended for extreme conditions

Dec. 31, 2023 (postponed)

Jan. 1, 2025 (effective)

Textiles

CA AB 1817

PFAS in textile articles is defined as “textile goods of a type customarily used in households and businesses, including but not limited to apparel, accessories, handbags, backpacks, draperies, shower curtains, furnishings, upholstery, bedding, towels, napkins and tablecloths.”

PFAS is defined by the following:

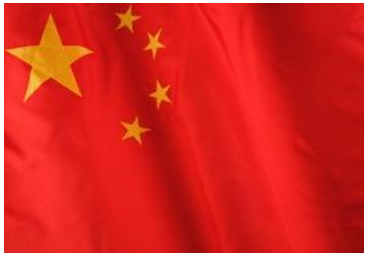
“PFAS that a manufacturer has intentionally added to a product and that have a functional or technical effect in the product, including the PFAS components of intentionally added chemicals and PFAS that are intentionally breakdown products of an added chemical that also have a functional or technical effect”

Effective dates

The presence of PFAS in a product or product component at or above the following thresholds, as measured in TOF:

- Jan. 1, 2025 – More than 100 parts per million
- Jan. 1, 2027 – More than 50 parts per million

Other jurisdictions



China
- Import/export of PFOS prohibited
- Manufacture, processing, use of PFOA prohibited
- Manufacture, sale, use, import of PFHxS prohibited

Japan
- PFOS already regulated
- Use, manufacture, import of PFHxS prohibited, in addition to certain products containing the substance
- Draft order for PFOA (estimated to take effect Jan. 2025)

Australia
- PFOA, PFOS, and PFHxS on Schedule 7 of the Industrial Chemicals Environmental Management Standard (IChEMS)
- Import, export, manufacture and use prohibited eff. July 1, 2025

New Zealand
- PFOA and PFOS prohibited already
- Use and production of PFHxS prohibited Oct. 5, 2023
- PFAS in cosmetics prohibited eff. Dec. 31, 2026

Some challenges to compliance

Lack of harmonized definition

- OECD 2021 definition
- OECD 2018 list
- TSCA definition for PFAS recordkeeping and reporting rule
- No ‘exhaustive’ lists for definitions

Supply chain challenges

- Gathering information required for reporting (lookbacks, complex structure)
- Supplier attestations for safe harbor provisions
- Part or material obsolescence
- Availability of alternatives
- Methods of quantification

Alignment between jurisdictions/other orgs

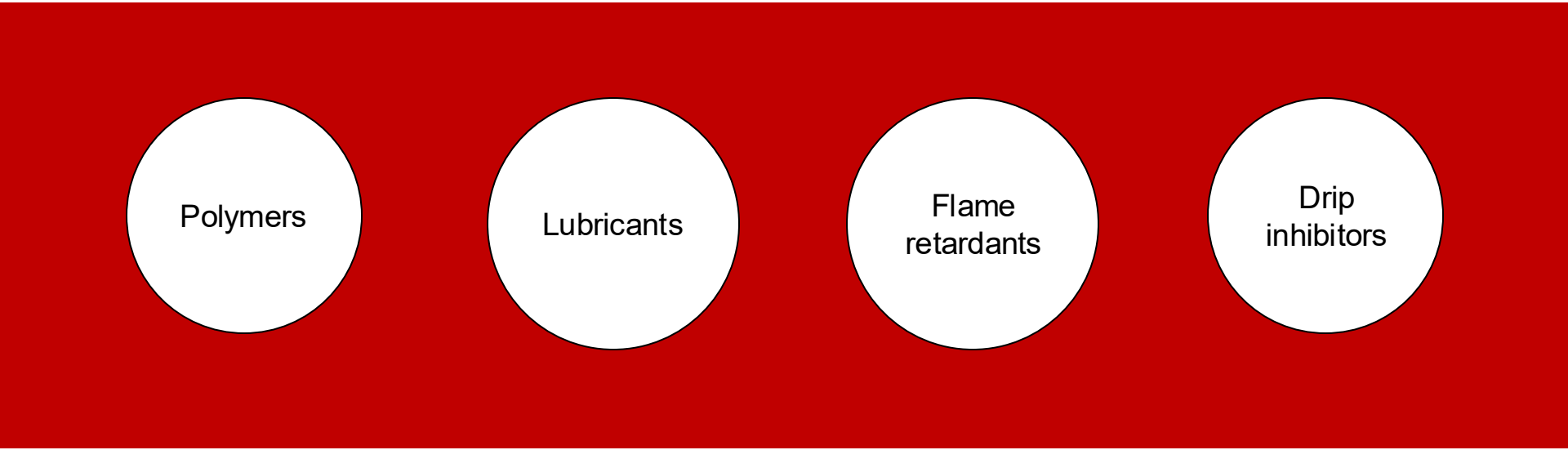
- Cookware or food packaging – agreement between states and US FDA
- Jurisdictions or regulatory bodies using differing PFAS definitions
- Variation in ‘sector’ definitions (e.g., cookware)
- Simultaneous timelines

Product stewardship and litigative drivers

- Companies named in lawsuits for environmental release
- “Green-washing” of products containing PFAS/false claims
- Consumer awareness and interest

In plastics

PFAS in plastics: What are they used for?



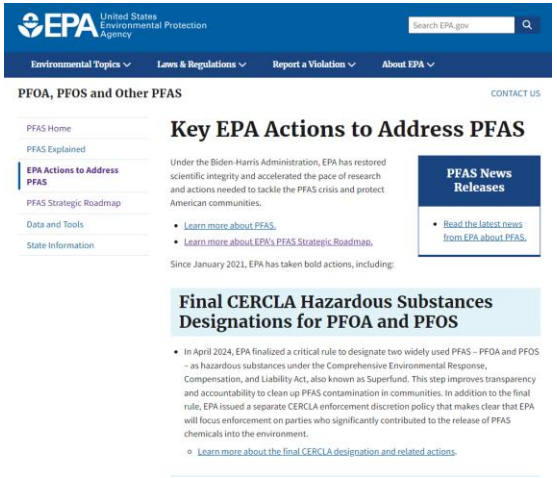
PFAS restriction proposals

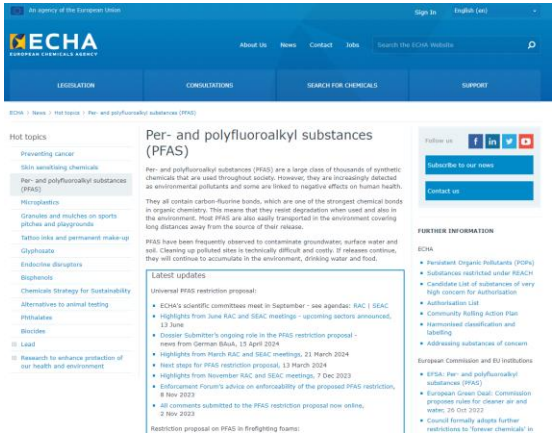
U.S. conditions of restriction: Total fluorine (TF) ≤ 50 mg/kg (currently)

EU conditions of restriction (in review with EU Commission):

- 25 ppb for any PFAS as measured with targeted PFAS analysis (polymeric PFAS excluded from quantification)
- 250 ppb for sum of PFAS measured as sum of targeted PFAS analysis, optionally with prior degradation of precursors (polymeric PFAS excluded from quantification)
- **50 ppm for PFASs** (polymeric PFASs included) – If total fluorine exceeds 50 mg F/kg, the manufacturer, importer or downstream user shall, upon request, provide to the enforcement authorities a proof for the fluorine measured as content of either PFAS or non-PFAS.

Asia Pacific (APAC), aligning with the Stockholm Convention: In major APAC countries such as China, Japan and South Korea, there appears to be a general trend toward adopting and enforcing the restrictions on the specific PFAS outlined in the Stockholm Convention.





How UL Solutions can help

PFAS testing

TF content	Select PFAS: Target analysis
Test for TF on the specific material/grade Test method: Combustion ion chromatography	Target analysis used to quantify levels of specific PFAS in various matrices Test method: Chromatographic test methods — liquid chromatography–mass spectrometry (LC-MS), gas chromatography–mass spectrometry (GC-MS)

Evaluation of TF content and/or selected PFAS analysis

Qualification and requalification

UL 746A, the Standard for Polymeric Materials – Short Term Property Evaluations

- Table 9.1 provides guidance on addition, elimination, replacement or level changes and the needed test program to show consistency.
- PFAS elimination can be evaluated based on the type of its functionality on formulation.
- Continue the existing recognition by demonstrating that the safety performance is identical.

UL Solutions engineers can support end to end —
polymer variation test plan, testing, analysis, recertification

PFAS certification – UL 746G

PFAS attributes in the UL Solutions Yellow Card™

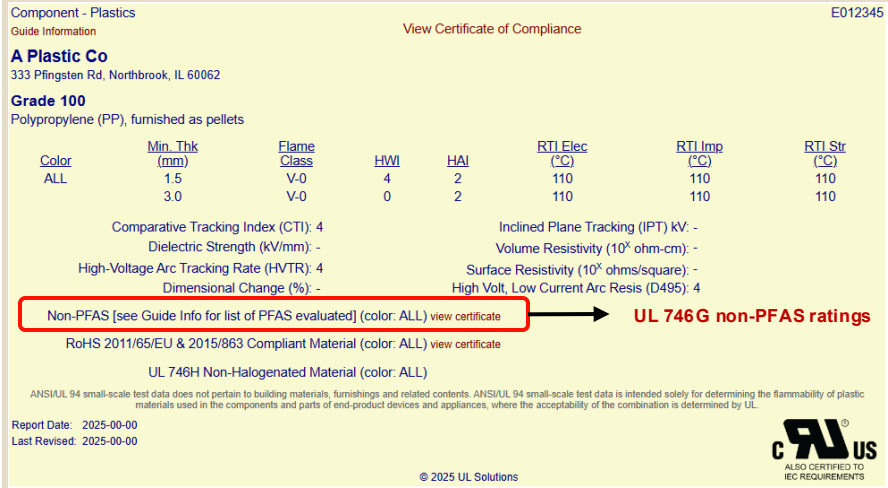
UL 746G, Outline of Investigation for Non-Fluorine and Non-PFAS Containing Materials

- Provides guidance on methods of analysis of fluorine and select PFAS substances
- Defines criteria for non-fluorine and non-PFAS ratings
- Includes virgin and recycled materials for analysis over non-PFAS and non-fluorine

Non-fluorine: Less than 50 ppm of fluorine when tested using combustion ion chromatography

Non-PFAS: Less than 50 ppm of fluorine and < 25 ppb of specific PFAS content (listed in Table 8.2 of UL 746G), and < 250 ppb of total specific PFAS content

Non-PFAS with total fluorine > 50 mg/kg not due to polymeric PFAS: Less than 25 ppb of specific PFAS content (listed in Table 8.2 of UL 746G), and < 250 ppb or total specific PFAS content but has > 50 ppm fluorine not due to polymeric PFAS (note: a thorough and complete material formulation review is required to verify that the fluorine in the materials is not due to PFAS)



Component - Plastics E012345

Guide Information View Certificate of Compliance

A Plastic Co

333 Pfingsten Rd, Northbrook, IL 60062

Grade 100

Polypropylene (PP), furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
ALL	1.5	V-0	4	2	110	110	110
	3.0	V-0	0	2	110	110	110

Comparative Tracking Index (CTI): 4
Dielectric Strength (kV/mm): -
High-Voltage Arc Tracking Rate (HVTR): 4
Dimensional Change (%): -

Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^X ohm-cm): -
Surface Resistivity (10^X ohms/square): -
High Volt, Low Current Arc Resis (D495): 4

Non-PFAS [see Guide Info for list of PFAS evaluated] (color: ALL) view certificate → **UL 746G non-PFAS ratings**

RoHS 2011/65/EU & 2015/863 Compliant Material (color: ALL) view certificate

UL 746H Non-Halogenated Material (color: ALL)

ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

Report Date: 2025-00-00
Last Revised: 2025-00-00

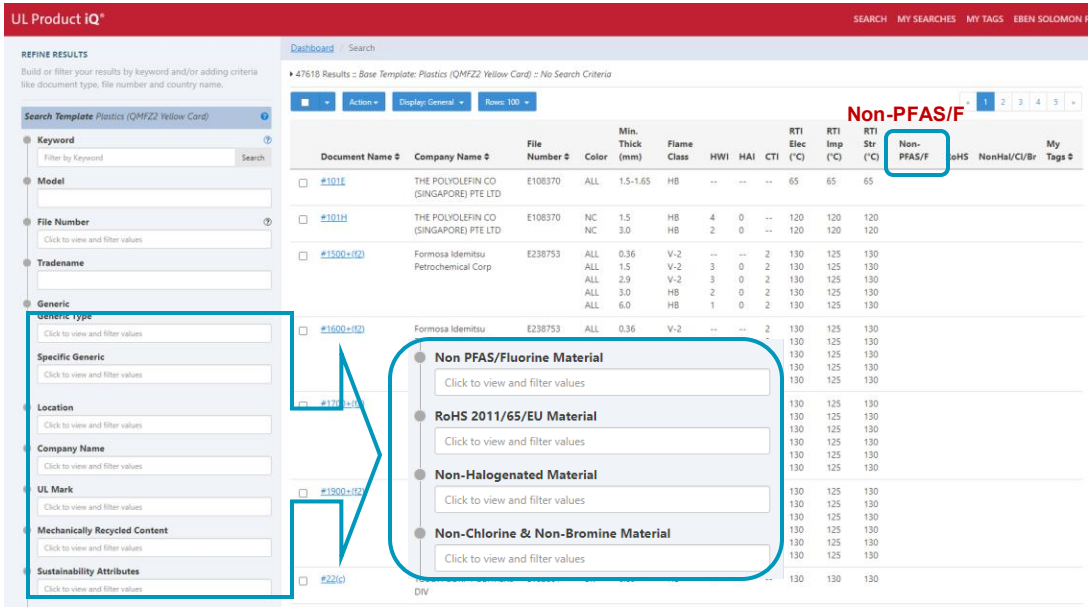
c UL us ALSO CERTIFIED TO IEC REQUIREMENTS

Non-PFAS attributes in the UL Solutions Yellow Card

Searchability and showcase to customer

UL Product iQ® searchability

- Visibility to external customers
- Searchable on-PFAS ratings
- Main page of Product iQ displays non-PFAS ratings



Easy searching

Primary benefits

- Easy means for specifiers and other purchasers to find plastics that meet non-PFAS requirements
- Inclusion of PFAS as a part of UL Solutions Follow-Up Services
- Elimination of repetitive lot testing
- Evaluation through globally recognized standards and test methods
- Creates a level playing field for the industry by allowing companies to compete fairly against the same standard
- Ability to communicate compliance clearly and credibly from a trusted provider on leading industry databases (Product iQ)
- Streamlined safety evaluation with non-PFAS evaluation to reduce time to market

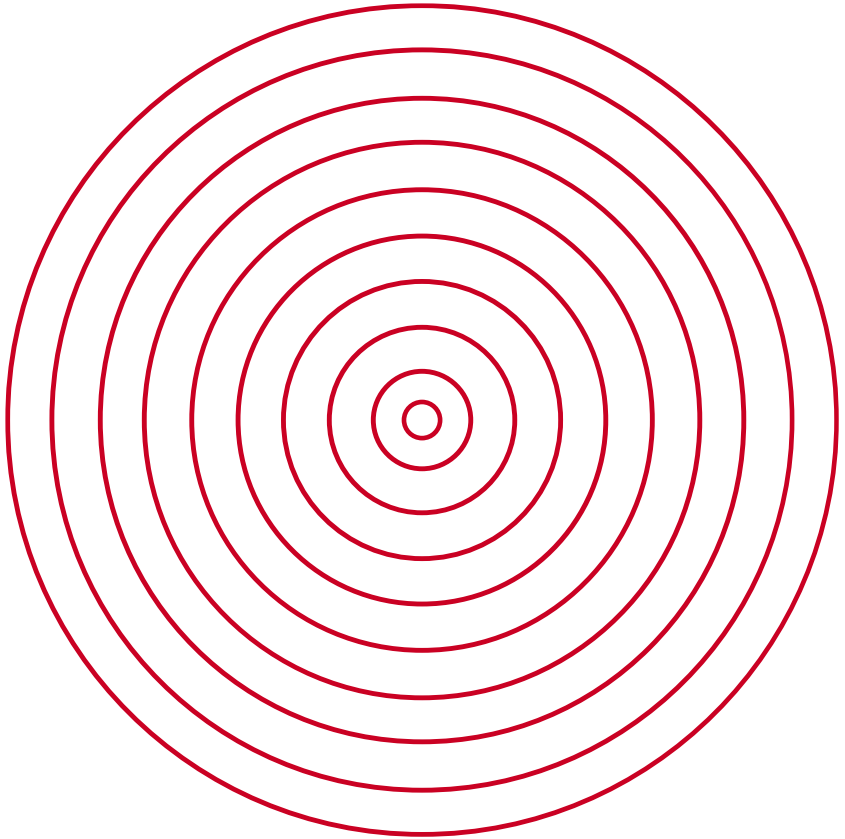
To whom this helps

- Showcase materials that need to comply with PFAS requirements, e.g., customer-driven
- Demonstrate environmentally friendly practices
- Showcase information to be publicly available
- Eliminate repetitive lot testing or repeated declaration of non-PFAS materials

Summary

- PFAS is one of the key topics discussed around the world, and regulations around PFAS are still in progress.
- Customers and end users are already looking for non-PFAS-based materials.
- UL 746G can help customers test and certify materials for non-fluorine or non-PFAS ratings.

Questions?



Eben Solomon Rajan, Thangaraj
Product Manager, Materials and Plastics
Engineered Materials
Email: rajan.thangaraj@UL.com
Tel: (+31) 61-131-4351

UL.com/productiq
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Safety. Science. Transformation.™

Best practices

- Identify products in supply chain containing PFAS
- Gather data to fulfill obligations
- Continue to monitor pending and newly introduced action
- As regulations evolve, assess impacts to product
- Pinpoint and evaluate alternatives, as necessary