



September 17, 2026

To: New Mexico Environment Department

Re: Implementation of House Joint Memorial 3 (2026 legislative session)

Submitted electronically at <https://nmed.commentinput.com/?id=x2khCUR9pK>.

Thank you for the opportunity to provide these comments to inform the New Mexico Environment Department's (NMED) implementation of House Joint Memorial 3¹ and consideration of the statutory exemptions in the PFAS Protection Act (hereafter "Act"; Sections 75-15-1 to 75-15-7 New Mexico Statutes Annotated 1978). These comments are submitted on behalf of the American Chemistry Council's Performance Fluoropolymer Partnership, whose members are some of the world's leading manufacturers, processors, and users of fluoropolymers, including fluoroelastomers and polymeric perfluoropolyethers. The Partnership's mission is to promote responsible production, use, and management of fluoropolymers, while also advocating for a sound science- and risk-based approach to their regulation.

Section 75-15-3.A.16 of the Act exempts products containing fluoropolymers from the law's reporting, currently unavoidable use, and testing provisions. The Act also contains exemptions for many products that rely on fluoropolymers to function safely and reliably, including:

- Medical devices and medical device and drug packaging regulated by the United States Food and Drug Administration (FDA), including prosthetic and orthotic devices (75-15-3.A.3);
- Various veterinary products and their packaging regulated under the jurisdiction of the FDA, U.S. Department of Agriculture, or U.S. Environmental Protection Agency (75-15-3.A.5);
- Products developed or manufactured for the purpose of public health or environmental or water quality testing (75-15-3.A.6);
- Motor vehicles or motor vehicle equipment regulated under a federal motor vehicle safety standard, excluding textile articles or refrigerants (75-15-3.A.7);
- Other types of motor vehicles (75-15-3.A.8);
- Watercraft, aircraft, a lighter-than-air craft, or a seaplane (75-15-3.A.9);
- Semiconductors, including those incorporated into electronic equipment and materials used in the manufacture of semiconductors (75-15-3.A.10);
- Non-consumer electronics and non-consumer laboratory equipment (75-15-3.A.11);
- A product used for the generation, distribution, or storage of electricity (75-15-3.A.13); and
- Equipment directly used in the manufacture or development of products described in 75-15.3.A.1 through 75-15-3.A.13 (75-15-3.A.14).

The fluoropolymer exemption also provides regulatory relief for product types listed in Section 75-15-3.B of the Act that do not also contain intentionally added PFAS that are not fluoropolymers. Clearly, the legislature understood the importance of fluoropolymers for the availability, reliability, and safety of products that could be regulated under the Act. The legislature also understood the fundamental differences between fluoropolymers and other types of PFAS. Therefore, the fluoropolymer exemption should be maintained without modification.

The fluoropolymer exemption is an explicit recognition that all PFAS are not the same and should not be approached as a single class for regulatory purposes. In 2023, the Department of Defense published a stern warning about laws and regulations that would ignore fundamental chemical and physical differences among different groups of PFAS. The agency said:

If future PFAS legal and regulatory frameworks ignore the OECD caution on the use of its PFAS definition and seek to broadly restrict the use of PFAS based on chemical structure, there could be extensive economic, industrial competitiveness, and quality-of-life impacts to U.S. society. The PFAS universe is structurally and physiochemically diverse and subgroups of PFAS may be more or less stable, persistent, and/or bioaccumulative compared to well-studied PFAS such as perfluorooctane sulfonate and perfluorooctanoic acid. Congress and the Federal regulatory agencies should avoid taking a broad, purely “structural” approach to restricting or banning PFAS. It is critical that future laws and regulations consider and balance the range of environmental and health risks associated with different individual PFAS, their essentiality to the U.S. economy and society, and the availability of viable alternatives.²

The U.S. Food and Drug Administration (FDA) also recognizes differences among different types of PFAS and notes the safety of fluoropolymers used in medical devices. In an on-line questions and answers document about the use of PFAS in medical devices,³ the agency emphasizes the following points:

- *Fluoropolymers used in medical devices are not the same as the PFAS linked to environmental contamination or health concerns. They differ in chemical structure, molecular size, and how the body reacts to them.*
- *Certain materials, like large-molecule PFAS (fluoropolymers), are critical components of life-saving medical devices, including catheters, cardiovascular implants, tubing and wound dressings, because of their unique properties including biocompatibility, durability, electrical resistance and lubricity.*
- *The FDA’s determination based on available scientific studies is that there is no reason to restrict the continued use of fluoropolymers in medical devices.*

The FDA similarly recognizes differences among different types of PFAS in a recent report on the safety of PFAS used in cosmetics.⁴ For the fluoropolymer PTFE, the agency

states, “Based on the review of available data, there is a low concern for safety associated with PTFE when used as an ingredient in cosmetic products under intended conditions of use.” The FDA report evaluates the possibility of multiple routes of exposure and toxicological effects, including genotoxicity, neurotoxicity, and others. The report also characterizes the adsorption, distribution, metabolism, and excretion of PTFE and provides details on literature searches and key references the agency used to support its conclusion.

For certain categories of products and materials, the maintenance of the fluoropolymer exemption is critical. Fluoropolymers are used in a wide range of consumer and industrial applications, including wiring and cable coverings, gaskets, seals, piping and lining, valves and pump components, films, semiconductor manufacturing equipment, medical device components, and battery/fuel cell components. Fluoropolymer-based coatings provide corrosion resistance, chemical resistance, weatherability, and extended service life for infrastructure, industrial equipment, building materials, and other critical applications.

Fluoropolymers and products made with fluoropolymers are used, almost uniformly, to enhance the durability and reliability of the products into which they are incorporated. This means less waste generation and less consumption of virgin resources (from increased durability and reliability of products), lower healthcare costs (from increased safety of products and occupational processes), as well as lower maintenance costs and lower replacement costs. These costs are separate from, and in addition to, the huge economic costs that could result from the unavailability of products and technologies that rely on fluoropolymers.

On the other side of the ledger, the societal costs of continuing use of fluoropolymers are minimal. Because of their biological inertness (see previous citations), there are no significant adverse health outcomes (and therefore no significant healthcare costs) associated with the use of products containing fluoropolymers. As discussed in more detail in the sections that follow, the “lifecycle” costs of fluoropolymers are unremarkable. As with any manufacturing process, beginning of life concerns can be addressed by imposing and enforcing adequate emissions controls. Similarly, the societal costs associated with disposal of fluoropolymers are also unremarkable, since fluoropolymers can be safely disposed of in landfills and recent studies also indicate that incineration is a viable method for destroying fluoropolymers (see below).

Fluoropolymer Manufacturing

Some voices have raised questions about the use of small-molecule PFAS as polymerization aids in the manufacture of fluoropolymers. PFOA was the most widely used polymerization aid, but it was voluntarily phased out many years ago by major fluoropolymer manufacturers in the U.S., Europe, and elsewhere.⁵ Since 2019, PFOA, its salts, and PFOA-related compounds are subject to global restriction under the Stockholm Convention on Persistent Organic Pollutants.⁶ Of note, the Convention’s Persistent Organic Pollutant Review Committee (POPRC) has listed several fluoropolymers as explicitly not covered by the 2019 decision.⁷ The exclusion of fluoropolymers signifies that the POPRC and Convention of the

Parties have concluded that fluoropolymers do not degrade to PFOA or related substances and do not require global phaseout under the Convention.

Fluoropolymer manufacturers are actively evaluating the viability of alternative polymerization technologies against four key criteria:

1. Demonstrated improvement in the environmental footprint of the new technology, relative to the existing technology;
2. Minimization of unidentified byproduct formation, as confirmed through comprehensive analytical methods;
3. Ability to meet customer and end-use processing and application performance needs; and
4. Assurance of technical feasibility at commercial manufacturing scale.

That many fluoropolymer manufacturers are transitioning away from fluorinated polymerization aids where technically feasible is well-documented.^{8,9,10,11,12,13,14,15,16,17} Fluoropolymer manufacturers are also continuously investing in state-of-the-art emissions control technologies. For example, Chemours has reduced its fluorinated organic chemical process emissions to air and water by 80% since 2018.¹⁸ At its Fayetteville Works facility, implementation of controls required under a court-approved Consent Order¹⁹ has resulted in substantial reductions in air emissions, including installation of a thermal oxidizer that destroys over 99.99% of PFAS air emissions directed to it.²⁰ Daikin has achieved its goal of recovering 99% of polymerization aids released from fluoropolymer manufacturing processes in the U.S. and Europe and is working to further reduce emissions worldwide.²¹ The six fluoropolymer producing members of the Fluoropolymers Product Group (FPG) under Plastics Europe have significantly reduced emissions of non-polymeric PFAS residues from polymerization aid technology to air and water at their European manufacturing facilities through a combination of alternative polymerization technologies, strict abatement controls, or both.²² In the next phase of their voluntary manufacturing program, FPG's fluoropolymer manufacturing members will include precursors, monomers, and finished fluoropolymers in their emission target reporting.²³

Fluoropolymer Use

Fluoropolymers are fundamentally different from non-polymeric, water soluble PFAS. Fluoropolymers are insoluble in water, so concerns about environmental mobility do not apply to fluoropolymers. Fluoropolymers are neither bioavailable²⁴ nor bioaccumulative and do not transform into non-polymer PFAS in the environment. In addition, fluoropolymers have been demonstrated to meet criteria to identify polymers of low concern for potential impacts on humans and the environment.^{25,26} Those criteria include consideration of the following characteristics:

- Polymer composition (structure and elemental composition);
- Molecular weight;
- Molecular weight distribution (consistency of molecule size in a sample);
- Particle size

- Percent of oligomers weighing less than 1,000 Daltons;
- Electrical charge;
- Reactive functional groups;
- Presence of low molecular weight leachables;
- Resistance to physical, chemical, and biological transformation; and
- Thermal stability.

In summary, it is scientifically inappropriate to apply the concepts of bioaccumulation and environmental mobility observed in low-molecular-weight PFAS directly to fluoropolymers. Fluoropolymers are high molecular weight substances and are insoluble in water, making them fundamentally different than small molecular weight, highly soluble PFAS.

The government of Canada has considered the references cited above and other literature and has concluded that fluoropolymers are fundamentally different from other PFAS and have set fluoropolymers aside in their proposed PFAS risk management plan. Fluoropolymers will be considered in a separate, more focused assessment in the future.²⁷

Fluoropolymer Disposal

Landfills

Questions have been raised about the potential breakdown of fluoropolymers in municipal landfills such that leachate and/or landfill gas containing non-polymeric PFAS might originate from the breakdown of fluoropolymers. We note that these questions are completely speculative and are not supported by any empirical evidence or a consideration of material properties that would predict fluoropolymer breakdown under landfill conditions. While there are certainly studies that have detected PFAS in landfill leachate and gas, the science shows that those PFAS are not from fluoropolymers or products containing fluoropolymers. As the NMED is well aware, there are categories of consumer products (e.g., rugs, carpets, food packaging) that have contained or been treated with other types of PFAS that have been shown to be less durable than fluoropolymers and, although unproven, may be a source of PFAS detected in landfill leachate and gas.

What we do know is that studies examining substance properties and environmental behavior under various plausible conditions can help us to predict the fate of a substance in a landfill. Henry and Timmer²⁸ subjected PTFE to OECD test guidelines designed to assess physical chemical properties (OECD Test Guideline 100 Series²⁹) and environmental fate and behavior (OECD Test Guideline 300 Series³⁰). The OECD test guidelines are a collection of internationally agreed testing methods used by government and industry to characterize potential hazards of chemicals and are the global standard for generating data and information used in chemical regulatory programs. Data generated by the tests in the 100 Series and 300 Series help predict whether and how a substance might degrade and/or transform under different environmental conditions. Among Henry and Timmer's findings were the following:

- Lack of volatility and extremely low vapor pressure, both of which can be predictive of a substance's affinity to partition to air;
- No UV-induced transformation when tested on soil surfaces or in water;
- No evidence of degradation by microbes under aerobic or anaerobic conditions;
- No evidence of biodegradation when tested in a simulated aerobic sewage test;
- No evidence of biodegradation in seawater;
- Stable and inert in soil under both aerobic and anaerobic conditions; and
- No transformation or degradation in simulated aerobic and anaerobic water/sediment systems.

These results, when combined with the well-known property of PTFE and other fluoropolymers to have extremely low chemical reactivity, demonstrate that speculation about fluoropolymer transformation to non-polymeric PFAS of concern is not supported by empirical guideline studies documenting physical chemical properties and environmental behavior.

Thermal Treatment

The management of fluoropolymers at the end of their useful life has become an increasingly important topic in discussions of PFAS regulation and waste management. Fluoropolymers may be contained in waste processed by municipal incinerators, and questions have emerged around whether thermal treatment of fluoropolymer-containing waste could generate uncontrolled PFAS emissions.

A growing body of peer-reviewed scientific evidence from bench-scale, pilot-scale, and full-scale studies demonstrates that fluoropolymers can be managed effectively at end of life through modern thermal treatment technologies. As summarized below, these studies show that when incineration systems are operated under typical operating conditions, fluoropolymers are mineralized, destruction efficiencies are high, and PFAS emissions are non-detectable or negligible. The available evidence therefore supports the conclusion that thermal treatment is a viable option for managing fluoropolymer at their end of life in a manner that is protective of both human health and the environment.

A key consideration in evaluating fluoropolymer end-of-life management is whether fluoropolymers are effectively destroyed and converted into stable inorganic products (e.g., mineralized) rather than transformed into other types of PFAS that may be lost through emissions. Recent studies have increasingly focused on measuring products of incomplete destruction rather than relying solely on traditional destruction efficiency metrics. Gehrmann et al.³¹ evaluated a representative mixture of fluoropolymers, including PTFE, PVDF, PFA, and FKM, under pilot-scale conditions representative of European municipal and hazardous waste incinerators at 860°C and 1095°C. The study reported mineralization of fluoropolymers with reduction rates greater than 99.99% and found non-detectable to negligible concentrations of PFAS across stack gas, wastewater, and residue samples. The authors concluded that the observed results demonstrated effective fluoropolymer mineralization and insignificant formation of PFAS as products of incomplete combustion.

Bench-scale studies reinforce these findings while expanding analytical coverage to include a broader range of potential combustion byproducts. Fujimori et al.³² investigated PTFE combustion between 700°C and 1100°C and demonstrated that byproduct formation decreases substantially as combustion temperatures enter the typical range of municipal waste incinerators as affirmed by Giraud et al.³³ in their assessment of U.S. and EU facility operating conditions. While measurable PFAS byproducts could be observed under lower-temperature conditions, the study found significant reductions in these compounds at typical operating conditions, illustrating the importance of appropriate operating conditions for complete fluoropolymer destruction.

An additional study by Jappen et al.³⁴ evaluated PTFE under conditions representative of municipal solid waste incinerators and incorporated one of the most comprehensive analytical programs yet applied to fluoropolymer combustion. The study used targeted PFAS analyses, measurements of ultra-short-chain compounds, volatile fluorinated compounds, fluorine mass balance calculations, and EPA Other Test Method 50 (OTM-50)³⁵ analytical methods. The authors reported a PTFE destruction efficiency of approximately 99.99962% and observed non-detect or below-reporting-limit concentrations for analyzed PFAS species. Fluorine recovery values ranging from approximately 95.6% to 100.3% further indicated that the carbon-fluorine bonds were effectively converted to inorganic fluorinated products rather than PFAS.

Under a similar laboratory setup, Yamada et al.³⁶ evaluated the fluoropolymer PCTFE at 850°C and 1150°C using a comprehensive analytical approach that included both targeted PFAS analysis and measurements enabled through OTM-50. The study reported PFAS destruction efficiencies exceeding 99.9999% at 1150°C and over 99.9% at 850°C. The evaluated temperature ranges fall within the typical operating conditions for municipal solid waste incinerators, affirming that PCTFE can be incinerated while minimizing emissions of concern.

Further evaluating high market volume fluoropolymers, Corbin et al.³⁷ examined PVDF under full-scale conditions at approximately 950°C and reported destruction efficiencies greater than 99.99% and destruction-and-removal efficiencies approaching 99.9999%. Also, Warnecke et al.^{38,39} conducted a full-scale study in Germany that doped the incinerator's waste stream with different types of PFAS, including fluoropolymers, fluoroelastomers, and canisters of aqueous film-forming foam (which does not contain fluoropolymers). The authors found only very small amounts of non-toxic CF₄ as a product of incomplete destruction, and this occurred under test conditions with PFAS dosing concentrations substantially above, and therefore not representative of, concentrations typically present in municipal solid waste. Excluding the CF₄ from their destruction rate calculations, the authors report greater than 99.999999 weight % destruction rate as measured in flue gas leaving the plant's stack.

Together, the studies described above demonstrate that effective end-of-life management is not limited to a single fluoropolymer chemistry. Instead, evidence exists across multiple commercially important fluoropolymers, including PTFE, PVDF, PFA, FKM, and PCTFE. Furthermore, the studies show that fluoropolymer waste will be mineralized and can be managed safely under typical incinerator operating parameters. Put another way, the conditions associated with effective fluoropolymer destruction are consistent with the conditions already

used in many contemporary thermal treatment facilities. Existing thermal treatment infrastructure is capable of controlling emissions and mitigating potential environmental releases associated with fluoropolymer disposal through thermal treatment.

Economic Impact

Two studies published by the U.S. Chamber of Commerce^{40,41} utilized a widely recognized economic input-output model to estimate the potential impacts on employment and economic loss if regulatory measures made certain groups of PFAS were no longer available in the following sectors:

- Aerospace manufacturing
- Building materials
- Data centers
- Defense
- Energy transition and emerging energy technologies
- Health care
- Mobility
- Semiconductor manufacturing

The studies modeled and aggregated direct, indirect, and induced effects, which are defined in each of the reports, nationally and for each state. The studies aggregated the impacts of the loss of all PFAS, so it is not possible to separate the economic impacts of the loss of different types of PFAS. However, the descriptions of essential PFAS to each of the sectors listed above mention the role of fluoropolymers or fluorinated gases.

The table below summarizes the studies' output for New Mexico. Note that the "energy transition" sector is not included. The sector is highly concentrated in a minority of states and, presumably, it is not a significant sector in New Mexico and therefore the impacts were negligible. Each of the impact indicators (the columns) are defined in the reports as follows:

Indicator Sector	Output (\$M)	Employment (thousands)	GDP (\$M)	Labor Income (\$M)	Federal Tax Revenues (\$M)	State and Local Tax Revenues (\$M)
Aerospace manufacturing	183.1	0.5	86.3	45.5	11.2	4.1
Building materials*	321.5	1,748	178.6	98.0	22.4	19.8
Data centers	615	2.0	258.4	128.8	32.4	19.1
Defense	223.5	0.6	118.2	64.4	15.7	5.4
Health care	398.1	1.0	120.3	62.9	15.2	9.2
Mobility	80.2	0.2	21.4	11.8	2.9	1.7
Semiconductor manufacturing	5,361.1	13.6	1,920.7	1,166.4	490.6	211.4
TOTAL	7,128.5	1,765.9	2,703.9	1,577.8	590.4	270.7

* The 2024 report covered all of the listed sectors except "building materials", which was among the sectors examined in the 2025 report.

Output: The value of an industry's production output is the sum of sales to final users (e.g., GDP) plus the sales to other industries (intermediate inputs). It is a measure of total economic activity.

Employment: The number of jobs identified are those supported in the sectors dependent on essential fluorochemistries.

GDP: GDP, or value-added, is defined as the total market value of all final goods and services. It is a measure of the wealth created by economic activity.

Labor Income: The household income provided is that which is supported by the jobs dependent on essential fluorochemistries.

Federal Tax Revenues: Incremental tax revenues for the federal government are included because of higher levels of economic activity, such as higher income tax payments.

State and Local Tax Revenues: Incremental tax revenues for state and local governments are also included because of higher levels of economic activity, such as higher sales tax payments.

The studies estimate that the total impact of policies that would limit the availability of fluoropolymers and fluorinated gases on New Mexico's economy would be over \$14 billion. Nearly 1.8 million jobs could be at risk and labor income reduced by nearly \$2.7 billion. Effects on GDP, federal tax revenue, and state and local tax revenues could also be substantial.

The potential impacts summarized above could be in addition to those New Mexico could experience due to the broad PFAS restriction currently under consideration in the European Union (EU). That proposal could significantly alter the PFAS (and PFAS containing products) relationship between the U.S. and EU. U.S. companies seeking inputs from the EU would have to look for alternative suppliers, and U.S. companies selling to Europe would have to identify customers in non-EU countries. A 2023 study by the U.S. Chamber of Commerce estimates that, for New Mexico, the impact of the EU restriction could result in a potential loss of \$151 million in GDP and over 1,200 jobs.⁴²

The NMED cannot assume the availability of alternatives for the thousands of complex uses of fluoropolymers in the sectors listed above (and others not included in the two cited reports). Where alternatives are concerned, it is necessary to examine factors in addition to potential human or environmental concerns. Technical performance, reliability, safety, durability, manufacturability, cost, and availability at an industrial scale are critical considerations as well.^{43,44,45} Moreover, fluoropolymers are found in multiple components in complex products and industrial systems, and it may not be possible to substitute them at the substance level alone (i.e., with drop-in substitutes).

Thank you for the opportunity to submit these comments. In summary:

- Fluoropolymers are fundamentally different from non-polymeric PFAS. They are insoluble in water, so questions about environmental mobility do not apply to fluoropolymers. Fluoropolymers are neither bioavailable nor bioaccumulative and do not transform into non-polymer PFAS in the environment.
- Fluoropolymers are used in a wide range of consumer and industrial applications to enhance the durability and reliability of the products into which they are incorporated.
- Many fluoropolymer manufacturers are transitioning away from fluorinated polymerization aids where technically feasible and are continuously investing in state-of-the-art emissions control technologies.
- Speculation about fluoropolymer transformation to non-polymeric PFAS of concern is not supported by empirical guideline studies documenting physical chemical properties and environmental behavior.
- A growing body of peer-reviewed scientific evidence from bench-scale, pilot-scale, and full-scale studies demonstrates that fluoropolymers can be managed effectively at end of life through modern thermal treatment technologies.
- **The legislature understood the fundamental differences between fluoropolymers and other types of PFAS when it passed the PFAS Protection Act. The fluoropolymer exemption should be maintained without modification.**

Please feel free to reach out if you have any questions.

Sincerely,

Jay West
Executive Director
Performance Fluoropolymer Partnership

References and Notes

- ¹ State of New Mexico, 57th Legislature, Second Session 2026 A Joint Memorial Requesting that the Environmental Improvement Board and the Department of Environmental Protection Provide a Report on the Implementation of the Per- and Poly-Fluoroalkyl Substances Protection Act and Recommendations to Improve Consumer Protections from Per- and Polyfluoroalkyl Substances. <https://www.nmlegis.gov/Sessions/26%20Regular/final/HJM003.pdf>.
- ² U.S. Department of Defense. August 2023. Report on Critical Per- and Polyfluoroalkyl Substance Uses. RefID: 1-22557AD. <https://www.denix.osd.mil/cmrrmp/denix-files/sites/14/2025/03/2023-DoD-Report-on-PFAS-Critical-Uses.pdf>.
- ³ U.S. Food and Drug Administration. PFAS in Medical Devices: What You Need to Know. Last updated September 1, 2026. <https://www.fda.gov/medical-devices/products-and-medical-procedures/pfas-medical-devices-what-you-need-know>.
- ⁴ U.S. Food and Drug Administration. 2025. Report on the Use of PFAS in Cosmetic Products and Associated Risks. <https://www.fda.gov/media/190319/download>.
- ⁵ U.S. Environmental Protection Agency. Fact Sheet: 2010/2015 PFOA Stewardship Program. <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/fact-sheet-20102015-pfoa-stewardship-program#meet>.
- ⁶ Stockholm Convention on Persistent Organic Pollutants. 2019. SC-9/12: Listing of perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds. Downloadable from <https://www.pops.int/TheConvention/ConferenceoftheParties/Meetings/COP9/tabid/7521/Default.aspx>.
- ⁷ The indicative list of substances covered by the decision is a living document. The most recent version is available on the Convention's website. See the link to the Excel spreadsheet at paragraph 3(b) in the POPRC document *Indicative list of substances covered by the listing of perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds* (UNEP/POPS/POPRC.21/INF/11) at <https://chm.pops.int/TheConvention/POPsReviewCommittee/Meetings/POPRC21/Overview/tabid/10273/ctl/Download/mid/28825/Default.aspx?id=5&ObjID=35890>.
- ⁸ Organization for Economic Cooperation and Development. 2025. Synthesis Report on Understanding Fluoropolymers and Their Life Cycle. OECD Series on Risk Management of Chemicals OECD Publishing, Paris, <https://doi.org/10.1787/35b035df-en>.
- ⁹ Arkema. 2008. Arkema eliminates fluorosurfactants from Kynar 500® PVDF. <https://www.arkema.com/global/en/media/newslist/news/global/products/2008/20081202-arkema-welcomes-y/>.
- ¹⁰ Solvay. 2021. Solvay launches non-fluorosurfactant technologies in the U.S. May 5, 2021. <https://www.solvay.com/en/press-release/solvay-launches-non-fluorosurfactant-technologies-in-us>.
- ¹¹ The Chemours Company. 2022. Chemours announces process innovation with new Viton™ fluoroelastomers advanced polymer architecture offering. <https://www.chemours.com/en/news-media-center/all-news/press-releases/2022/chemours-announces-process-innovation-with-new-viton-fluoroelastomers-advanced-polymer-architecture>

- ¹² Gujarat Fluorochemicals Limited. 2022a. Company Announcement. August 27, 2022. <https://gfl.co.in/assets/pdf/Announcement-on-NFPA-technology-FKM-27-Aug-2022.pdf>.
- ¹³ Gujarat Fluorochemicals Limited. 2022b. Company Announcement. September 3, 2022. <https://gfl.co.in/assets/pdf/Announcement-9th-March-2022.pdf>.
- ¹⁴ Gujarat Fluorochemicals Limited. 2022c. Company Announcement. November 20, 2022. https://gfl.co.in/assets/pdf/GFL%20Announcement%2030.11.22_new.pdf.
- ¹⁵ Solvay. 2022. Solvay eliminates the need for fluorosurfactants in its Tecnoflon® FKM portfolio. June 15, 2022. https://www.solvay.com/sites/solvay_solvay/files/SOLPR030EN0622%20Tecnoflon%20NFS.pdf.
- ¹⁶ AGC. 2025. July 18, 2025 – AGC Launches Innovative Fluoroelastomer Without the Use of Surfactants or Fluorinated Polymerization Solvents. <https://www.agcchem.com/news/2025/july-18-2025-agc-launches-innovative-fluoroelastomer-without-the-use-of-surfactants-or-fluorinated-polymerization-solvents/>.
- ¹⁷ Trelleborg. 2026. Trelleborg launches fluorosurfactant-free semiconductor sealing materials. August 12, 2026. <https://www.trelleborg.com/en/seals/news-and-events/news/trelleborg-launches-fluorosurfactant-free-semiconductor>.
- ¹⁸ The Chemours Company. 2026. Trusted Chemistry: 2025 Sustainability Report. <https://www.chemours.com/en/sustainability>.
- ¹⁹ The consent order, filed February 25, 2019, is available at <https://www.chemours.com/en/-/media/files/corporate/fayetteville-works/proposed-consent-order-attachments-signatures-2019-02-25.pdf?rev=ab237c7de0c44c79a2cadf3a7b305e79&hash=F20ABFF41EADFC9AF7C07F8E6467CB68>.
- ²⁰ The Chemours Company. March 30, 2020. Chemours' Thermal Oxidizer Destroying PFAS at Greater Than 99.99% Efficiency. <https://www.chemours.com/en/-/media/files/corporate/fayetteville-works/2020-0320-thermal-oxidizer-efficiency-results-announced.pdf>.
- ²¹ Daikin. 12 February 2026. Daikin's Approach to PFAS. <https://www.daikinchemicals.com/sustainability/pfas.html>.
- ²² Fluoropolymer Products Group. 26 March 2025. European Fluoropolymer Manufacturers make significant steps towards ambitious emissions reduction target. <https://www.fluoropolymers.eu/wp-content/uploads/2026/06/Manufacturing-Programme-Press-Statement-26-March-2025-.pdf>.
- ²³ Fluoropolymer Products Group. 9 July 2026. Executive Abstract—Fluoropolymer Manufacturing Programme 2.0. <https://www.fluoropolymers.eu/wp-content/uploads/2026/07/Executive-Abstract-Manufacturing-Programme-2.0.pdf>.
- ²⁴ Bioavailability refers to the movement of a chemical substance from the site of administration, or exposure, to the blood or lymph where it can be systemically delivered to target organs for biological interaction.
- ²⁵ B.J. Henry, J.P. Carlin, J.A. Hammerschmidt, R.C. Buck, L.W. Buxton, H. Fiedler, J. Seed, O. Hernandez. 2018. A critical review of the application of polymer of low concern and regulatory criteria to fluoropolymers. Integr Environ Assess Manag 14:316-334, <https://doi.org/10.1002/ieam.4035>.
- ²⁶ S.H. Korzeniowski, R.C. Buck, R.M. Newkold, A. El kassmi, E. Leganis, Y. Matsuoka, B. Dinelli, S. Beauchet, F. Adamsky, K. Weilandt, V.K. Soni, D. Kapoor, P. Gunasekar, M. Malvasi, G. Brinati, S. Musio. 2022. A critical review of the application of polymer of low concern

regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. *Integr Environ Assess Manag* 19:326-354. <https://doi.org/10.1002/ieam.4646>.

²⁷ Environment and Climate Change Canada and Health Canada. 2025. State of Per- and Polyfluoroalkyl Substances (PFAS) Report. Cat No.: En84-395/2025E-PDF. ISBN: 978-0-660-75383-6. <https://www.canada.ca/en/environment-climate-change/services/evaluating-existing-substances/state-per-polyfluoroalkyl-substances-report.html>.

²⁸ B.J. Henry and N. Timmer. 2025. Environmental fate and behavior studies of a polymeric PFAS, polytetrafluoroethylene (PTFE) – results and application to risk assessment. *Chemosphere* 385:144569. <https://www.sciencedirect.com/science/article/pii/S0045653525005132>.

²⁹ https://www.oecd.org/en/publications/oecd-guidelines-for-the-testing-of-chemicals-section-1_20745753.html

³⁰ https://www.oecd.org/en/publications/serials/oecd-guidelines-for-the-testing-of-chemicals-section-3_g1gha296.html

³¹ H.-J. Gehrman, P. Taylor, K. Aleksandrov, P. Bergdolt, A. Bologna, D. Blye, P. Dalal, P. Gunasekar, S. Herremanns, et al., Mineralization of fluoropolymers from combustion in a pilot plant under representative European municipal and hazardous waste combustor conditions, *Chemosphere* 365 (2024) 143403. <https://doi.org/10.1016/j.chemosphere.2024.143403>.

³² T. Fujimori, A. Saido, T. Murakami, T. Mine, H. Okamoto, Comparative evaluation of quantifiable PFAS generated as byproducts from polytetrafluoroethylene (PTFE) incineration, *J. Fluorine Chem.* 289 (2026) 110523. <https://doi.org/10.1016/j.jfluchem.2025.110523>.

³³ R. Giraud, P. Taylor, P. Huang, Combustion operating conditions for municipal waste-to-energy facilities in the U.S., *Waste Manag.* 132 (2021) 124 – 132. <https://doi.org/10.1016/j.wasman.2021.07.015>.

³⁴ O. Jappen, M. Michell, T. Yamada, M. Kahandawala, Mineralization of PTFE under conditions representative of municipal solid waste to energy incineration facilities, *J. Fluorine Chem.* 293 (2026). <https://doi.org/10.1016/j.jfluchem.2026.110603>.

³⁵ See links to the method and related resources as <https://www.epa.gov/emc/emc-other-test-methods>.

³⁶ T. Yamada, M. Kahandawala, Y.Y. Law, T. Alagappan, P.H. Taylor. 2026. Bench scale incineration of polychlorotrifluoroethylene, *Chemosphere* 401:144908. <https://doi.org/10.1016/j.chemosphere.2026.144908>.

³⁷ A. Corbin, X. Chaucherie, N. Humez, T. Gosset, S. Beauchet, P. Aillard, 2026. Industrial-scale incineration of polyvinylidene fluoride (PVDF), *J. Fluorine Chem.* 293:110602. <https://doi.org/10.1016/j.jfluchem.2026.110602>.

³⁸ R. Warnecke, D. Wohter, A. Holfelder. 2025. PFAS Campaign at GKS Plant. Presentation at the meeting of The Confederation of European Waste-to-Energy Plants, Gdansk, Poland. https://www.cewep.eu/wp-content/uploads/2025/06/GKS-PFAS-campaign-at-full-scale-plant-Warnecke_Ragnar-final.pdf.

³⁹ D. Wohter, A. Holfelder, R. Warnecke, H. Gerhmann, P. Quicker, D. Stapf. 2026. Behaviour of PFAS in Municipal Waste Incineration – Results of a Large-Scale Measurement Campaign and Relevance for the Sector. https://tkv-wissen.de/wp-content/uploads/2026/05/Fachbeitrag_Wohter_MNA13.pdf.

- ⁴⁰ U.S. Chamber of Commerce. 2024. Essential Chemistries: Providing Benefits Across the U.S. Economy. https://www.uschamber.com/assets/documents/Essential-Chemistries_-_Providing-Benefits-Across-the-U.S.-Economy.pdf.
- ⁴¹ U.S. Chamber of Commerce. 2025. Essential Chemistries: Providing Benefits Across the U.S. Economy; Part 2: Examining the Impact of Possible Restrictions on Heating, Cooling, & Building Materials. https://www.uschamber.com/assets/documents/Essential-Chemistries-Economic-Benefits_-_Part-2-Impact-on-Heating-Cooling-Building-Materials_2025-03-18-190749_bmbe.pdf.
- ⁴² U.S. Chamber of Commerce. 2023. Impacts of the PFAS Restriction on Trade Between the U.S. and the European Union: Evaluation of PFAS applications across U.S. industries. https://www.uschamber.com/assets/documents/Impacts-of-PFAS-Restriction-on-Trade-Between-the-U.S.-and-the-European-Union_9.25.2023.pdf.
- ⁴³ Savannah River National Laboratory. 2024. Assessment of Fluoropolymer Production and Use with Analysis of Alternative Replacement Materials. <https://www.osti.gov/servlets/purl/2370520>.
- ⁴⁴ Richards, R.; White, R.; Stenning, R. 2025. The Per- and Polyfluoroalkyl Substances (PFAS) and Their Role as Enablers in the Competitiveness of European Industry. European Parliament. [https://www.europarl.europa.eu/RegData/etudes/STUD/2025/778581/ECTI_STU\(2025\)778581_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2025/778581/ECTI_STU(2025)778581_EN.pdf).
- ⁴⁵ Ramboll. 2026. Assessment of Alternatives to Fluoropolymers for the Transport and Electronics & Semiconductor Sectors. https://www.fluoropolymers.eu/wp-content/uploads/2026/04/FPG_Alternatives-Assessment_Final-Report_v2.0.pdf.