

December 21, 2020

Irina Makarow
Chemical Action Planner
Department of Ecology
PO Box 47600
Olympia, WA 98504

RE: Washington State Department of Ecology Draft PFAS Chemical Action Plan

Dear Ms. Makarow:

Submission Summary

This submission and the various links and attachments that are included, are intended to accurately portray the modern U.S. textile industry and to review the significant steps taken to reduce the overall usage of PFAS related chemistries within our industry. In response to the Washington State Department of Ecology's Draft PFAS Chemical Action Plan, published on October 7, 2020, we note the following:

- That the U.S. textile industry has made major strides in the reduction of PFAS applications and in replacing long-chain fluorinated polymers with less environmentally impactful short-chain polymers.
- The utilization of PFAS applications by the U.S. textile manufacturers is negligible relative to other industries, and that the banning of PFAS treatments in textiles would have no meaningful impact on the environment.
- Consequently, we recommend that the State of Washington adopt a science-based process to regulate PFAS on the characteristics of individual chemicals, not as a single class. There are close to 5,000 PFAS class chemicals that vary substantially and have different uses. Regulatory actions should be undertaken on an individual chemical basis, rather than as a class.

NCTO & the U.S. Textile Industry

As way of background, the National Council of Textile Organizations (NCTO) is a not-for-profit trade association established to represent the entire spectrum of the United States textile sector, from base fibers to finished sewn products, as well as supplier sectors that have a stake in the prosperity and survival of the U.S. textile industry. We serve as the voice of the US textile industry and represent approximately 140 member companies. NCTO's headquarters are in Washington, DC.

For more information, please visit our website at www.ncto.org.

The U.S. textile sector is an extremely diverse, technically advanced, and highly capital-intensive industry that involves a multi-stage production chain. This domestic production chain is comprised of the following: suppliers in the cotton, wool, and man-made fiber sectors; yarn and fabric manufacturers; textile home furnishings producers; dyers, printers, and finishers; and our customers in the U.S. apparel, automotive, aerospace, construction materials, energy exploration and other end-use industries.

The domestic textile industry is an important component of the U.S. economy with production found in every region of the country. The industry provides much-needed jobs in rural areas and has functioned as a springboard for workers out of poverty into good-paying jobs for generations.

The domestic textile sector further bolsters the national economy as a consumer of billions of dollars of inputs and support services, such as machinery, telecommunications, technology services and numerous other products needed to manufacture textiles. According to the U.S. Department of Commerce, every job directly supplied by the U.S. textile sector provides three additional jobs throughout the economy. As such, direct and indirect employment supplied by the U.S. textile industry is responsible for over 2.3 million jobs nationwide. Additional details related to the U.S. textile industry are provided below:

U.S. Textile Industry Key Facts

- The U.S. textile industry supply chain - from fibers to apparel and other sewn products - employed 585,000 workers in 2019. One textile job supports three other jobs in the U.S.
- The U.S. is the second largest exporter of textile-related products in the world. Fiber, textile, and apparel exports combined were \$29.1 billion in 2019.
- The U.S. textile industry exported to more than 200 countries, with 24 countries importing \$100 million or more.
- Domestically, the U.S. textile industry invested \$18.7 billion in new plants and equipment from 2009 to 2018.
- U.S. textile mills have increased productivity by 69 percent since 2000.
- The U.S. is the world leader in textile research and development, producing advanced materials with technical, medical, military, aerospace, athletic, and myriad other applications.
- The domestic textile industry is critical to our national security in that it supplies more than 8,000 different products to the U.S. military.

NCTO's FluoroTechnology Workgroup

Fluorinated repellents are an important, value-add feature for some of our members' fabrics, so in 2016 our organization formed a FluoroTechnology Workgroup (FTWG). As downstream users of fluorinated side-chain polymers, the FTWG has engaged with the FluoroCouncil

(www.fluorocouncil.com), fluorochemical manufacturers, Non-Governmental Organizations (NGOs), and governing authorities to improve our understanding of this complex topic.

The group's intent is to actively engage in the discussion around concerns raised by FluoroTechnology as they pertain to textiles. Educating members on the topic and assisting them in adopting best practices is also an objective. To that end, the FTWG has developed briefing documents, such as NCTO FluoroTechnology FAQs² (Frequently Asked Questions), for member companies to share with customers. A copy of the NCTO FluoroTechnology FAQs is linked [here](#).

Benefits of Fluorinated Repellents

FTWG members agree unanimously that fluorinated repellents impart lower surface tension and, thus, better repellency of water-based liquids, oil-based liquids, and their respective stains. In the case of military fabrics, upholstery, certain apparel items, awnings and other longer-life textiles, customers have established high performance, quantifiable specifications to maximize the useful life, reduce maintenance costs, and increase consumer satisfaction.

Quantification of Environmental Impacts from Manufacturing Textiles

To understand the environmental implications of shortening product life, an effort was made in 2017 to collect quantifiable data on the inputs and emissions that go into producing upholstery fabric. There is a negative environmental impact when fabrics are replaced prematurely because a fabric fails to meet customers' expectations. A letter was sent to the NCTO membership, requesting company-specific data for manufacturing inputs (water, materials, energy consumption) and emissions (effluent, landfill waste, air emissions) in the production of repellent-treated upholstery, a product that is difficult or impossible to machine-laundry. Aggregated results are shown in NSF-ANSI 336 Upholstery Inputs and Outputs for NCTO rev13-Jun-17, which is linked [here](#).

Data shows that shortening the lifespan of upholstery fabrics by even 10% has negative environmental impacts that, in the opinion of the FTWG, pose a bigger threat to the environment than the avoidance of fluorinated repellents. By applying this data to the estimated size of the repellent-treated fabric market in the US, potential impacts for shortening the useful life of upholstery are reported in a presentation by NCTO member Crypton at a December 3, 2020 Chemical Watch Conference on the "Essential Uses of PFAS in the EU". Further, this presentation provides a detailed review of the environmental considerations related PFAS usage in upholstery applications and can be found [here](#).

Potential for Circularity

Fabric take-back programs, such as the one utilized by NCTO member Unifi with Steelcase, maker of office furniture, are in their infancy, but this example illustrates what is achievable. Based on

input from Unifi, maker of Repreve® recycled yarn, the application of fluorinated repellents does not prevent the thermo-mechanical recycling of polyester.

Continuous Improvement and Assessment of Alternatives

Though the toxicology of PFAS chemistries is complicated, the FluoroTechnology Workgroup concluded that, on balance, the industry's transition to short-chain fluorinated polymer, managed in conjunction with the US Environmental Protection Agency (EPA), was a positive step forward for the industry in terms of material safety. Members understand, however, that all fluorocarbons are environmentally persistent. For this reason, and because the chemistries are relatively expensive, our members have worked (individually, not collectively) with chemical manufacturers, fluorochemical and otherwise, to continually assess non-fluorinated alternatives. To date, no non-fluorinated repellent has been made commercially available for repelling low surface-tension liquids and stains, including oils and alcohol (> 20% concentration) that are present in a variety of foods and beverages.

Market Forces are Working

Aware of the opportunity to promote repellent finishes that are not environmentally persistent, our members have identified less-repellent, non-fluorinated materials that are incorporated into textiles readily available to the marketplace. In some cases, member companies are promoting both non-fluorinated and fluorinated articles. In other cases, members are treating fabrics only with non-fluorinated repellents and are relying on their eco-friendly marketing to gain business. Though there are performance differences - fluorinated repellents repel oily stains and non-fluorinated repellents do not -- consumers have freedom of choice and are able to make informed decisions on which fabrics are best-suited for their end-use.

NCTO Position on PFAS

NCTO submits these points for your consideration:

- NCTO is in favor of restricting long-chain fluorinated polymer for use as a repellent for textiles. Short-chain fluorinated polymers are an advancement in material safety based on the toxicity data comparing PFOA and PFOS (final degradants of long-chain fluorinated polymer) to PFHxA (final degradant of short-chain fluorinated polymer).
- So long as fabrics finished with short-chain fluorinated repellents are not shown to cause harm to human health, NCTO would like for the marketplace, not regulatory agencies, to decide which textile end-uses should continue to utilize fluorinated repellents.
- Environmental persistence, in the opinion of NCTO, is insufficient reason for restricting the use of short-chain fluorinated polymer, particularly since it does not inhibit thermo-

mechanical recycling of treated fabric.

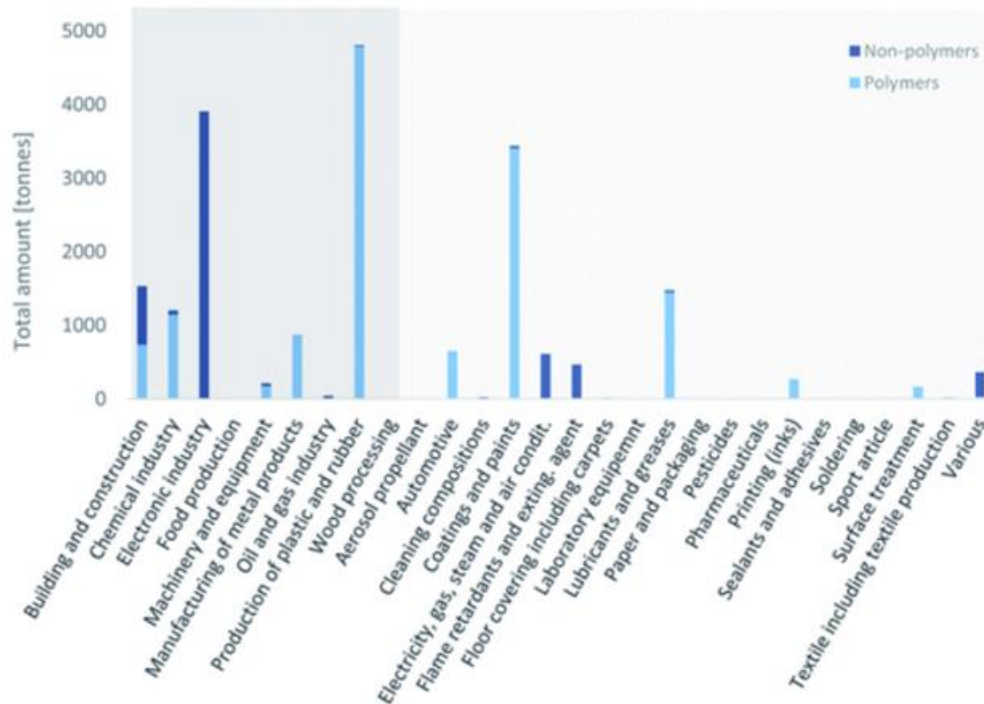
- If short-chain fluorinated polymers are to be restricted to select end-uses, NCTO asks that consideration be given to
 - end-uses that protect human health (e.g. medical PPE)
 - end-uses where the lifespan expectation is relatively long (e.g. 2+ years)
 - and the potential for recycling treated fabric.

Washington State Draft PFAS Action Plan

We note that the State's Draft PFAS CAP Recommendations, Section 3 proposes PFAS reductions for certain textile items, such as carpets and upholstery. It also proposes state purchasing preferences for PFAS free textiles and furniture.

We encourage the review committee to consider the significant strides the U.S. textile sector has made in replacing long-chain fluorinated polymers with short-chain fluorinated polymers. As is almost universally acknowledged, advancement in material safety based on the use of short-chain chemistries holds significant toxicity and environmental benefits. Banning or restricting use without a clear delineation between long-chain and short-chain polymers would in our view be an overreach that would undermine the advancements made to date related to PFAS applications, and disincentivize the continued research needed to ensure even greater environmental protections.

Further, we draw your attention to the table below, which was included in an article published by the journal Royal Society of Chemistry (United Kingdom) on October 30, 2020 and entitled "An overview of the uses of per- or polyfluoroalkyl substances (PFAS)". It demonstrates that the overall impact of textile related PFAS usage is miniscule, relative to other industrial sectors. The table was compiled from publicly known PFAS usage data for select European countries. While volumes differ by region, it reveals the over-weighted emphasis on PFAS in textiles by some groups. As this table clearly indicates, regulators could eliminate all textile uses and never make a meaningful impact on monomeric PFAS pollution.



In Closing

NCTO thanks you for considering our input as you endeavor to improve our shared environment. The regulations you develop hold the potential to directly impact our U.S. manufacturing operations and workforce. As such, we reiterate our key recommendation regarding your Draft PFAS Chemical Action Plan, as follows:

- The State of Washington should adopt a science-based process to regulate PFAS on the characteristics of individual chemicals, not as a single class. There are close to 5,000 PFAS class chemicals that vary substantially and have different uses. Regulatory actions should be undertaken on an individual chemical basis, rather than as a class.

We thank you for considering the perspectives of all stakeholders, including U.S. textile producers.

Sincerely,

Kimberly Glas
 President & CEO
 NCTO