

Date: February 21, 2020

To: The Honorable Sen. Virginia "Ginny" Lyons, *Chair*
Senate Committee on Health and Welfare
115 State Street
Montpelier, VT 05633

cc: Sen. Richard Westman, *Vice Chair*
Sen. Ann Cummings
Sen. Dick McCormack
Sen. Debbie Ingram, *Clerk*
Doris Oatley, *Committee Assistant*

From: Martin Wolf
Director, Sustainability & Authenticity
Seventh Generation, Inc.
Burlington, VT 05401

RE: Testimony in support of S.295 An act relating to perfluoroalkyl and polyfluoroalkyl substances

Dear Sen. Lyons:

On behalf of Seventh Generation, thank you for this opportunity to testify *in support* of S.295 An act relating to perfluoroalkyl and polyfluoroalkyl substances as used in class B firefighting foam; food packaging; rugs and carpets, and children's products

Seventh Generation is the nation's leading brand of household and personal care products designed to help protect human health and the environment. Established in 1988, our Burlington, Vermont based company employs over 150 people, distributing products to natural food retailers, supermarkets, mass merchants, and online retailers across the United States and more than 20 other countries.

Among the products manufactured and sold by Seventh Generation are laundry detergents, dish detergents, hand soaps, recycled household paper products, baby diapers, baby wipes, and feminine hygiene products.

In October 2016, Seventh Generation was acquired by Unilever, a global manufacturer of consumer products dedicated to making sustainable living commonplace.

In presenting this testimony, I come before you as a senior employee of one of Vermont's successful, socially responsible businesses, as a chemist, which science I have studied and practiced most of my adult life, as a father, and as a citizen of the State of Vermont who values the health of our people, our State's natural beauty, and the delicate balance we are striving to achieve between maintaining that health, that beauty, and our economic vitality.

As noted in Vermont Act 188, Chapter 38a. Chemicals of High Concern to Children, § 1771, "It is the policy of the State of Vermont:

(1) to protect public health and the environment by reducing exposure of its citizens and vulnerable populations, such as children, to toxic chemicals, particularly when safer alternatives exist;"

Background

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are substances widely used to manufacture non-stick, grease and stain-resistant coatings in a variety of industrial and consumer products, including food packaging, non-stick cookware, carpets and upholstery, ski wax, floor wax, outdoor gear, dental floss and firefighting foams.¹ In 2009, PFASs were listed as persistent organic pollutants under the Stockholm Convention due to their ubiquitous, persistent, bioaccumulative, and toxic nature.^{2,3}

PFAS are found in the blood of more than 98% of Americans⁴ and contaminate the drinking water sources for more than 16 million Americans, including large numbers of Vermonters.⁵ PFAS released to the environment have been shown to travel around the globe⁶ and bioaccumulate and biomagnify.⁷ They are found virtually everywhere in water, air and terrestrial environments, including locations far from points of release. They are present in indoor dust, air, food and wildlife; and have also been found in the milk and serum of breastfeeding women.⁸

Health effects from PFAS exposure include hormone disruption,⁹ immune system effects,¹⁰ high cholesterol, thyroid disease, hypertension,¹¹ lowered sex and growth hormones in children,¹² and altered mammary gland development.¹³

Regarding Sec. 1. 18 V.S.A. CHAPTER 33. FIREFIGHTING AGENTS AND EQUIPMENT

The risks to human health and the environment of using PFAS were established in the Background section of this document. The wisdom of banning PFAS in firefighting agents and equipment is, therefore, clear.

In April 2019 the Interstate Chemical Clearinghouse (IC2) reported that New Zealand, the Australian states of South Australia and Queensland, the U.S. Federal Aviation Administration (FAA) and the State of Washington have, or will soon, ban fluorinated firefighting foams.¹⁴ Over 90 fluorine-free water additives from 22 manufacturers were identified and tabulated with relevant data including performance specifications and disclosed ingredients in the product.¹⁵

Unfortunately, not all ingredients were listed for all products. Thus, it is possible that a substitute foam may contain ingredients of a known hazard that were not disclosed. This could lead to a “regrettable substitution” of one hazardous firefighting foam for another.

Therefore, it is recommended that language be included in the bill that requires disclosure of all ingredients in an alternative product, and that requires any alternative product be less hazardous to human health and less likely to persist in the environment than the product it replaces.

Regarding Sec. 2. 18 V.S.A. CHAPTER 33A. CHEMICALS OF CONCERN IN FOOD PACKAGING

The risks to human health and the environment of using PFAS were established in the Background section of this document. The wisdom of banning PFAS in food contact packaging is, therefore, clear. Section 2 of this bill extends sale and use restrictions in food packaging to two additional substances, bisphenols and phthalates.

Of concern in this section is the definition of bisphenols. The definition, “industrial chemicals used primarily in the manufacture of polycarbonate plastic and epoxy

resins” includes many chemical classes, and the description omits other relevant applications such as the manufacture of polyurethanes.

Therefore it is recommended that a more precise definition of bisphenols be used, such as, Bisphenols are a group of chemical compounds with two phenol functionalities joined at the para position by a single atom, usually carbon but possibly sulfur, phosphorus, or other element. Bisphenols are used to make polycarbonates, epoxies, polyurethanes, and other plastic resins.

As with alternatives to PFAS in firefighting foams, alternatives to PFAS, bisphenols, and phthalates in food packaging may contain ingredients of a known hazard that were not disclosed. This could lead to a “regrettable substitution” of one hazardous chemical in food packaging for another.

Therefore, it is recommended that language be included in the bill that requires disclosure of all ingredients in an alternative product, and that requires any alternative substance in a product be less hazardous to human health and less likely to persist in the environment than the substance it replaces.

Regarding § 1672. FOOD PACKAGING

The description, “...inks, dyes, pigments, adhesives, stabilizers, coatings, plasticizers, or any other additives to which phthalates or bisphenols have been intentionally added in any amount greater than an incidental presence” is ambiguous as bisphenols may be added in large quantities but react to leave only trace quantities.

Therefore it is recommended that this be rephrased as, “...inks, dyes, pigments, adhesives, stabilizers, coatings, plasticizers, or any other additives which contain phthalates or bisphenols in any amount greater than an incidental presence, as determined by the Commissioner.”

Regarding Sec. 4. 18 V.S.A. § 1773 CHEMICALS OF HIGH CONCERN TO CHILDREN

As a manufacturer of baby diapers and baby wipes Seventh Generation appreciates including, by statute, PFAS in the list of chemicals of high concern in children's products.

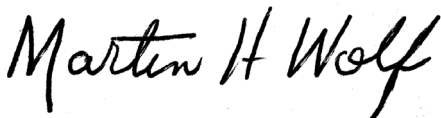
In Conclusion

Seventh Generation and other responsible businesses already exclude thousands of chemicals of concern, including PFAS, bisphenols, and phthalates, from their formulation pallets. We will not use, and there is no need for us to use, substances that are known or likely to cause cancer, or substances known or likely to express reproductive toxicity, or substances known or likely to be persistent, bioaccumulating, and toxic.

By prohibiting the use of PFAS in firefighting foam, food packaging, rugs and carpets, and children's products, Vermont would protect our public health and our environment and fulfill the policy of the state to reduce exposure of its citizens and vulnerable populations, such as children, to toxic chemicals, particularly when safer alternatives exist.

Thank you for your attention to, and consideration of, these comments.

Respectfully submitted,



Martin Wolf
Director, Sustainability & Authenticity
Seventh Generation, Inc.

¹ California Environmental Protection Agency, Department of Toxic Substances Control (Cal/EPA DTSC), Safer Consumer Products Program, *Product – Chemical Profile for Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) in Carpets and Rugs*, February 2018

² Blum A, Balan SA, Scheringer M, Trier X, Goldenman G, Cousins IT, et al. (May 2015). "[The Madrid Statement on Poly- and Perfluoroalkyl Substances \(PFASs\)](#)". *Environmental Health Perspectives*. **123** (5): A107-11. doi:10.1289/ehp.1509934. PMC 4421777. PMID 25932614.

³ "[Stockholm Convention Clearing](#)". chm.pops.int. Secretariat of the Stockholm Convention. Retrieved 26 October 2016

⁴ Calafat et al. 2007. *Polyfluoroalkyl Chemicals in the U.S. Population: Data from the National Health and Nutrition Examination Survey (NHANES) 2003–2004 and Comparisons with NHANES 1999–2000*. *Environ Health Perspect*. Nov; 115(11): 1596–1602.

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- ⁵ Hu et al. *Detection of Poly- and Perfluoroalkyl Substances (PFASs) in U.S. Drinking Water Linked to Industrial Sites, Military Fire Training Areas, and Wastewater Treatment Plants*; Environ. Sci. Technol. Lett. 2016, 3, 344–350; DOI: 10.1021/acs.estlett.6b00260
- ⁶ Giesy and Kannan, 2001, *Global Distribution of Perfluorooctane Sulfonate in Wildlife* Environ. Sci. Technol. 35(7):1339-1342
- ⁷ Conder et al., *Are PFCAs bioaccumulative? A critical review and comparison with regulatory criteria and persistent lipophilic compounds*. 2008, Environ. Sci. Technol. 42 (4): 995-1003
- ⁸ Cal/EPA DTSC 2018, Ibid.
- ⁹ Henry ND et al. 2013. *Comparison of in vitro cytotoxicity, estrogenicity and anti-estrogenicity of triclosan, perfluorooctane sulfonate and perfluorooctanoic acid.* J Appl Toxicol. Apr;33(4):265-72.
- ¹⁰ Grandjean et al. 2017. *Serum Vaccine Antibody Concentrations in Adolescents Exposed to Perfluorinated Compounds.* Environ Health Perspect. Jul 26;125(7):077018.
- ¹¹ www.c8sciencepanel.org
- ¹² Lopez-Espinosa MJ, Mondal D, Armstrong BG, Eskenazi B, Fletcher T. 2016. *Perfluoroalkyl Substances, Sex Hormones, and Insulin-like Growth Factor-1 at 6-9 Years of Age: A Cross-Sectional Analysis within the C8 Health Project.* Environ Health Perspect. 124(8): 1269-1275.
- ¹³ White SS, et al. *Gestational and Chronic Low-dose PFOA Exposures and Mammary Gland Growth and Differentiation in Three Generations of CD-1 Mice.* Environ Health Perspect. 2011 Aug;119(8):1070-6. DOI: 10.1289/ehp.1002741
- ¹⁴ New York State Pollution Prevention Institute, Rochester Institute of Technology, April 2019, “Per- and Polyfluorinated Substances in Firefighting Foam”
- ¹⁵ New York State Pollution Prevention Institute, Ibid.