Rhode Island
MEMO IN OPPOSITION
HB 5019

The American Chemistry Council (ACC) is a national trade association representing chemicals and plastics manufacturers in the United States, including member companies in the state of Rhode Island. Our members are committed to the safety of their products and to the protection of the public health.

Over 96% of all manufactured goods are directly touched by the business of chemistry, making this industry an essential part of every facet of our nation's economy. Chemistry provides significant economic benefits in every state including Rhode Island. Thanks to chemistry, our lives are healthier, safer, more sustainable and productive than before. Over 3000 people are employed by the chemistry industry in Rhode Island.

Thank you for the opportunity to provide testimony in opposition to **HB 5019** on behalf of the American Chemistry Council. This bill would amend the Consumer PFAS Ban of 2024 to include a ban on the use of all perfluoroalkyl and polyfluoroalkyl substances (PFAS) in any firefighting personal protective equipment (PPE). We are concerned about the overly broad approach based on the incorrect presumption that all PFAS are harmful and should be banned in firefighter PPE.

The bill treats PFAS as a single substance even though the term "PFAS" encompasses a diverse group of compounds with very different chemical and biological properties. The term "PFAS" does not inform whether a substance is potentially harmful or not.[1] The term simply means that molecules covered by the term share a similar structural trait. It does not speak to characteristics such as toxicity, environmental fate, and bioavailability among diverse PFAS chemistries.

The overly broad definition of PFAS in HB 5019 is inconsistent with more specific approaches to understanding PFAS. For example, Buck *et al.* divided PFAS into two large categories, nonpolymeric and polymeric, and further identified classes within those two categories based on the molecular structure (Figure 1).[2] Such an approach is useful because molecular structure can help to understand chemical and biological behavior among the diverse classes of PFAS. Similarly, the Organization for Economic Cooperation and Development (OECD) has subdivided PFAS into several groups based on their distinct structures (Figure 2).[3]

Different types of PFAS are used to meet protective gear performance requirements in the National Fire Protection Association (NFPA) 1500™, *Standard on Fire Department Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting,* which set minimum levels of protection from thermal, physical, environmental, and bloodborne pathogen hazards encountered during the line of duty.

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1 Organization for Economic Co-operation and Development (OECD). 2021. Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance. OECD Series on Risk Management, No. 61, OECD Publishing, Paris. Publicly available.

2 Buck *et al.* 2011. Perfluoroalkyl and polyfluoroalkyl substances in the environment: Terminology, classification, and origins. Integrated Environmental Assessment and Management *7*(4):513-541. https://doi.org/10.1002/ieam.258. Open access.

3 Organization for Economic Cooperation and Development (OECD) 2021. Reconciling Terminology of the Universe of Per- and Polyfluoroalkyl Substances: Recommendations and Practical Guidance, OECD Series on Risk Management, No. 61, OECD Publishing, Paris.
Publicly available.

For example, moisture barriers made of the fluoropolymer polytetrafluoroethylene, or PTFE, are used as an inner layer in turnout gear to help manage body temperature and heat stress when fighting a fire. It is our current understanding that PTFE-based moisture barriers are the only moisture barrier technology that allows turnout jackets and pants to meet the standards in NFPA 1971.

Fluorotelomers are another type of PFAS used in the durable water repellent treatment of the outer shell of turnout gear, which is necessary to help repel water and protect against harsh, hazardous liquids or other chemicals that a firefighter may encounter in the line of duty. Fluorotelomers also provide exceptional durability, which enhances the functional integrity, and maintenance of apparel, as well as resistance to degradation caused by heat, chemicals, abrasion, and ultraviolet radiation.

Fluoropolymers, including PTFE, meet internationally accepted criteria to be considered polymers of low concern (PLC) to human health and the environment.[4,5] Criteria for identifying polymers of low concern have been developed by governments around the world to identify polymers with physical and chemical attributes that would not raise concerns about potential hazard traits.[6,7] The PLC criteria include evaluation of:

- Molecular structure and elemental composition;
- Molecular weight and the consistency of molecule size in a sample;
- Particle size;
- Low molecular weight residuals that might leach from the polymer;
- Electrical charge;
- Presence and nature of reactive functional groups;
- Resistance to physical, chemical, and biological transformation; and
- Resistance to heat and other environmental stressors.

4 Henry, B.J., *et al.* 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. Open access.

5 Korzeniowski, S.H., *et al.* 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. Open access.

6 Organization for Economic Co-operation and Development (OECD). 2009. Data analysis of the identification of correlations between polymer characteristics and potential for health or ecotoxicological concern. Document ENV/JM/MONO(2009)1. Paris, France. Publicly available.

7 BIO by Deloitte. 2015. Technical assistance related to the review of REACH with regard to the registration requirements on polymers Final report prepared for the European Commission (DG ENV), in collaboration with PIEP. Publicly available.

As our cited studies have concluded, fluoropolymers are insoluble substances and therefore concerns about the mobility of much smaller, highly water soluble PFAS substances do not apply to fluoropolymers. Importantly, fluoropolymers are neither bioavailable nor bioaccumulative and do not transform into long-chain non-polymeric PFAS like PFOA and PFOS in the environment.

Fluorotelomers have been thoroughly reviewed by regulators prior to introduction into commerce, are subject to ongoing oversight, and are supported by a body of scientific health and safety data. They have undergone testing for potential effects on both human health and the environment, including regulatory reviews by the U.S. Environmental Protection Agency (EPA). In addition, regulatory bodies in Europe, Canada, and Asia have determined that they meet relevant standards for the protection of human health and the environment.

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In summary, perfluoroalkyl and polyfluoroalkyl substances, or "PFAS", are a large, diverse group of chemical compounds. All PFAS are not the same, and their properties vary widely. The term "PFAS" does not inform whether a substance is harmful or not, and regulating chemical substances arbitrarily as a large class can lead to unjustified restrictions that are not based on sound science and may create public concern where none is warranted. Authorities should regulate chemicals based on clearly identified risks to health and/or the environment assessed on a robust scientific basis.

Thank you again for the opportunity to submit testimony.

Sincerely,

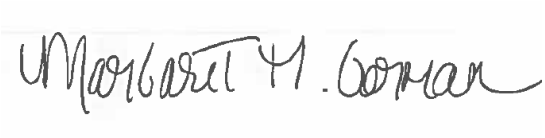

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Figure 1. Classification of PFAS in Buck *et al.* 2011.

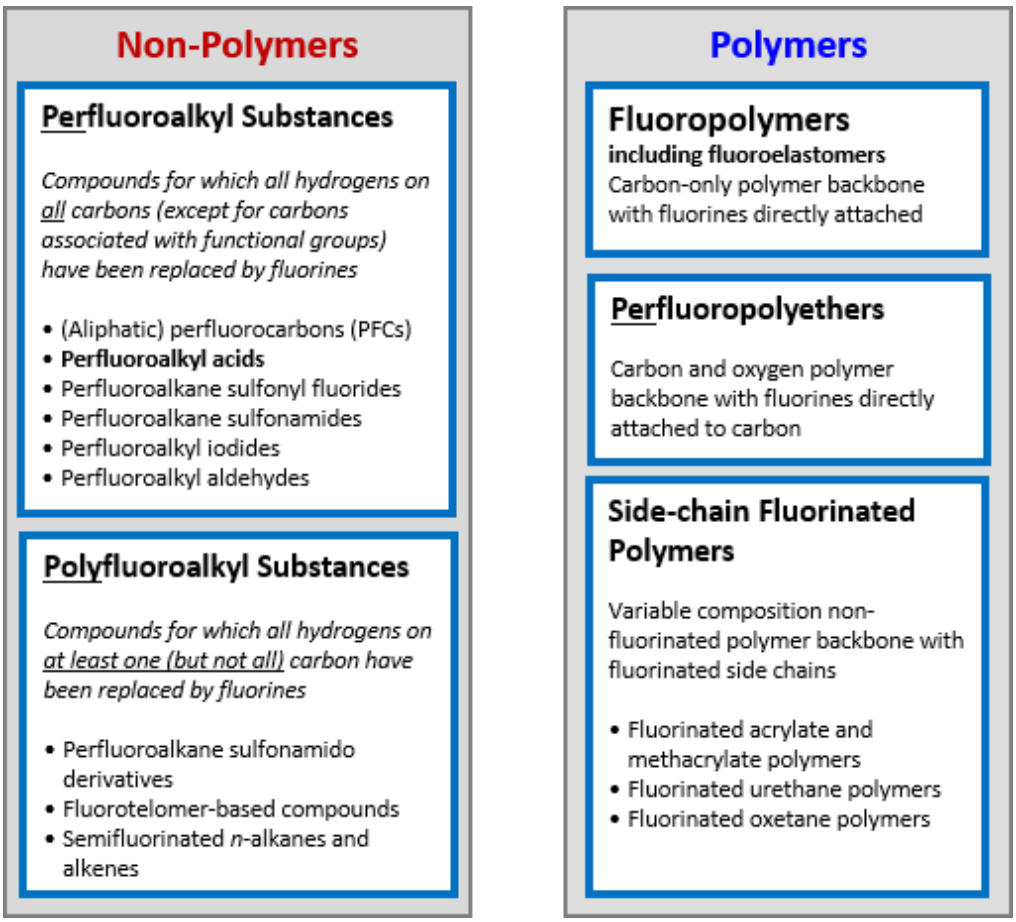

Figure 2. Classification of PFAS in OECD 2021.