

# PFAS Grouping: An Emerging Scientific Consensus



## PFAS/Fluorotechnology Enables Life in the 21st Century

Per- and polyfluoroalkyl substances (PFAS), or Fluorotechnology, are a diverse universe of chemistries that makes possible the products that power our lives – the cellphones, tablets and telecommunications we use every day to connect with our friends and family; the aircraft that power the U.S. military; alternative energy sources critical to sustainability goals; and medical devices that help keep us healthy.

However, all PFAS are not the same. Individual chemistries have their own unique properties and uses, as well as environmental and health profiles.

According to the U.S. Environmental Protection Agency, “approximately 600 PFAS are manufactured (including imported) and/or used in the United States.” Among these 600 are substances in the solid (e.g., fluoropolymers), liquid (e.g., fluorotelomer alcohols) and gaseous (e.g., hydrofluorocarbon refrigerants) forms. The fundamental physical, chemical, and biological properties of solids, liquids and gases are clearly different from one another. The very distinct physical and chemical properties of the three types of commercial PFAS described demonstrate how varied they are and how a simple grouping approach to risk would be inadequate.

However, some have proposed grouping all PFAS chemistries together for the purposes of regulation. Although the grouping of some substances within the class based on similar physical, chemical, and biological properties may be possible – a proposal to regulate all PFAS as a single class is neither scientifically accurate nor appropriate.

## Latest Research Reveals Flaws in Grouping

But don't take our word for it. A scientific consensus is emerging that it is not accurate or even possible to group all PFAS chemistries together for the purpose of regulation. Indeed, state and federal entities that have explored the possibilities of a class-based approach have recognized the significant challenges.

For instance:

- ECOS<sup>1</sup> – the Environmental Council of the States – which represents state and territorial environmental agency leaders, several of whom have implemented regulatory programs in their home states, has said: “Many regulators and subject-matter experts advise against grouping PFAS as an entire class.”
- The Vermont Department of Environmental Conservation<sup>2</sup>, which was specifically charged by the legislature to develop a class regulation or to explain why such a regulation wasn't possible said, “The Review Team spent over a year deliberating, researching, and discussing the potential to regulate PFAS as a Class. After reviewing the current peer-reviewed literature, as well as the available toxicology data for PFAS, the Review Team determined that at the current time it is not feasible to regulate PFAS as a Class.”
- And federal scientists participating in a workshop convened last fall by the National Academies of Science, Engineering, and Medicine (NASEM) to review the federal PFAS research program acknowledged the broad diversity of properties with this group of substances, concluding that<sup>3</sup> “PFAS substances thus present unique challenges for grouping into classes for risk assessment.”
- These state and federal entities findings are also echoed in a recent scientific, peer-reviewed publication<sup>4</sup> evaluating possible grouping frameworks to assess PFAS.

## Industry Supports Science-Based Solutions

ACC and its members understand the potential issues with PFAS chemistries and are working with policymakers at the federal and state levels to support strong, science-based chemical regulations that are protective of human health and the environment.

1. ECOS. Processes & Considerations for Setting State PFAS Standards (February 2020).
2. <https://dec.vermont.gov/sites/dec/files/PFAS/20180814-PFAS-as-a-Class.pdf>.
3. NASEM. Workshop on Federal Government Human Health PFAS Research, October 26-27. Board on Environmental Studies and Toxicology (2020). <https://www.nap.edu/read/26054/chapter/1>.
4. Goodrum PE et al. Application of a framework for grouping and mixtures toxicity assessment of PFAS: a closer examination of dose additivity approaches. *Toxicol Sci*: 1-19 (2020). <https://doi.org/10.1093/toxsci/kfaa123>.