Why a Strong PFAS Definition Matters

safer states

MARCH 2025

SUMMARY:

A strong and consistent definition for PFAS "forever chemicals" is critical for use in government and corporate policies. Creating loopholes for certain PFAS chemicals from regulation is problematic because it will continue to allow contamination and slow the search for safer alternatives. If alternatives aren't currently available for a certain application, states can provide longer phase out timelines rather than exempting certain PFAS from regulation.

What Are PFAS?

PFAS (per- and polyfluorinated alkyl substances) are a class of nearly 15,000 chemicals used to make products resist grease, oil, water, or heat. Many products contain PFAS including cookware, cosmetics, clothing, carpets, and firefighting foams. PFAS are also widely used in industrial processes and then discharged into waterways or released into the air.

Known as toxic "forever chemicals" because they do not break down in the environment, PFAS have contaminated more than 8,800 drinking water, industrial and military sites across all 50 states. According to the US Geological Survey, over 45% of all tap water in the US is contaminated with PFAS. Researchers are also finding it in breast milk and house dust.

A growing body of scientific research has found links between PFAS exposure and a wide range of health problems including weaker immune systems, cancer, increased cholesterol levels, pregnancy-induced hypertension, liver damage, reduced fertility in men and women, and increased risk of thyroid disease.

Why Defining PFAS Matters

Despite mounting health concerns, the chemical lobby has sought changes to the scientifically grounded definition of PFAS that would create regulatory loopholes. Currently, nearly half of U.S. states define PFAS in a way that includes all forms of the chemical, including polymers (plastics), and gases. However, industry pressure continues to push for narrower definitions that exclude widely used PFAS.

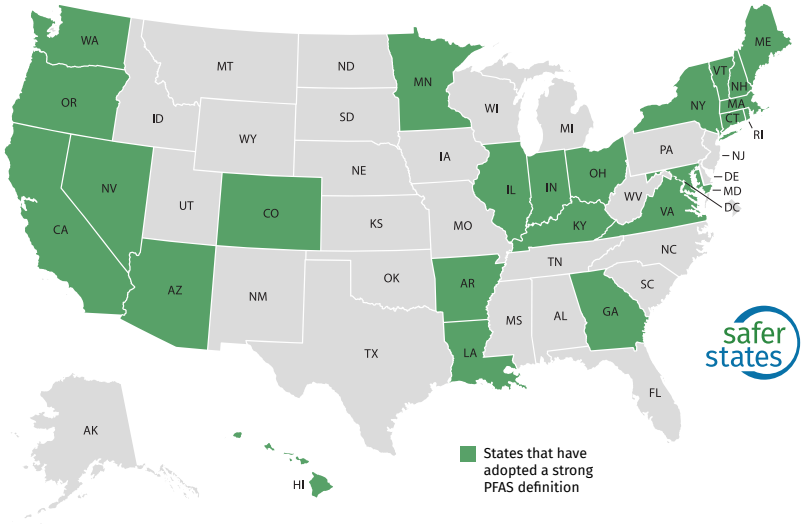
State Leadership: 24 States and the Military Are Already Taking Action

Governments are using a scientifically grounded definition of PFAS for restrictions. There is broad scientific consensus that supports defining PFAS as **"a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom."** This widely adopted definition has been used in state and federal legislation since 2018, creating important consistency for manufacturers, retailers, and regulators.

The scientific definition of PFAS: "a class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom."

This definition has been adopted by:

- At least 24 states, including AR, AZ, CA, CO, CT, GA, KY, HI, IL, IN, LA, MA, MD, ME, MN, NH, NV, NY, OH, OR, RI, VA, VT, and WA.
- Congress, through the National Defense Authorization Act in 2021, 2022 and 2023.



Science-Based Definitions Are Critical for Strong Protections

All PFAS, including polymers and gases, contain at least one carbon-fluorine bond. These chemical bonds are the strongest single bonds in organic chemistry and it is what makes these chemicals virtually impossible to break down in the environment, which is why they are often referred to as "forever chemicals". However, PFAS manufacturers claim that certain PFAS, including polymers and gases, are safe—but this is not the case.

The science-based definition of PFAS includes:

- PFAS polymers or "fluoropolymers", which are a plastic version of PFAS and are used in consumer products and manufacturing. The manufacture and disposal of these products pollutes air and water.
- Fluorinated gases, which are PFAS used in refrigerants and some HVAC equipment despite the presence and use of alternatives already on the market. The use of these PFAS is increasing the amount of harmful pollutants in drinking water and fluorinated gases are now the main source of PFAS pollution globally.

Evidence from whistleblowers and archived company records demonstrates certain PFAS manufacturers didn't disclose to the public the toxicity of PFAS for decades. Many of the manufacturers and users of PFAS are claiming that PFAS polymers and gases are safe, even though evidence suggests otherwise.

States Cannot Rely on the EPA's Definition of PFAS

The EPA has been inconsistent and unclear when it comes to the question of what set of chemicals should be labeled a PFAS, instead relying on a case-by-case approach generating criticism from prominent scientists. One of EPA's definitions of PFAS excludes several problematic PFAS that are used in cosmetics, cleaning products, plastics and electronics.

The bottom line is: adopting an unscientific definition that exempts certain types of PFAS from regulation will put families and communities at risk.