

Halogenated Clean Agents and PFAS

PFAS (perfluoroalkyl and polyfluoroalkyl substances) refers to a class of chemicals that contain fluorine atoms bonded to carbon atoms. They became commercially available in the late 1940's/1950's and are used in numerous industries worldwide. Some of these industries include aerospace, automotive, medical devices, military, semiconductors, electronics, textiles, paper products, fire protection, cleaning products and so on. Many PFAS chemicals are persistent in the environment, and some have made their way into groundwater and drinking water from the use of PFAS chemicals as well as from PFAS manufacturing facilities. This has led to efforts by legislators and regulators to restrict the sale and use of PFAS chemicals and products containing them.

Historically PFAS was used to describe specific longer chain compounds such as the eight-carbon chemicals PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid). More recent PFAS definitions have broadened to include over 4,000 different fluorinated compounds ranging from gases to liquids to solids and including carbon chain lengths as short as a single carbon. As a result, some PFAS definitions now encompass halogenated clean agents used for fire suppression.

PFAS Regulations

Initial regulatory actions on PFAS were focused on individual substances such as PFOS and PFOA that are known to be persistent, bioaccumulative and toxic (PBT). Some recent legislative and regulatory proposals are focused on all PFAS substances based only on their persistence in the environment, regardless of whether they are bioaccumulative and/or toxic.

[European Chemicals Agency \(ECHA\) PFAS Restriction Proposal](#)

In March 2023, ECHA released for public consultation a proposal by five European countries - Germany, the Netherlands, Norway, Sweden, Denmark – for a broad REACH restriction covering PFAS substances. Under the proposal the following fire protection agents are classified as PFAS: FK-5-1-12, HFC-227ea, HFC-125, HFC-236fa, HCFC-123 and 2-BTP.

The proposal, which is generally referred to as the universal PFAS or U-PFAS restriction, would prohibit the manufacture, import, and sale in the European Union of most PFAS substances and products containing them 18 months after becoming final (entry into force). It includes time-limited derogations (exemptions) for many PFAS applications that don't currently have alternatives. The proposal acknowledges that there are no current alternatives and none in development for many uses of halogenated clean agents and includes a 12-year derogation for "clean fire suppressing agents where current alternatives damage the assets to be protected or pose a risk to human health." Based on the expected timing of the PFAS restriction, this would delay the prohibition on halogenated clean agents until the 2040-2042 timeframe. In response to the public consultation, HARC made submissions to ECHA in June and September 2023 with extensive information on halogenated clean agents. The HARC submissions noted that there are likely to be continuing uses of halogenated clean agents beyond 2040 and suggested a time-unlimited derogation for halogenated clean agents be included in the restriction.

The U-PFAS restriction proposal along with the approximately 5,000 comments submitted in response to the public consultation were reviewed by the ECHA Committee for Risk Assessment (RAC) and ECHA Committee for Socio-Economic Analysis (SEAC). The RAC final opinion and the SEAC draft opinion on the restriction proposal were published in March 2026.

The SEAC draft opinion proposes the following restrictions for clean fire suppressing agents:

- HFC fire suppressing agents would continue to be controlled by the EU F-gas regulation (2024/573), where they are prohibited from being placed on the market in fire protection equipment "except when required to meet safety requirements at the site of operation."
- A 12-year derogation is proposed for FK-5-1-12 used to protect critical and culturally significant infrastructure, which means that FK-5-1-12 would not be prohibited until 13.5 years after entry into force (12 years + 18 months).

- A 12-year derogation is proposed for 2-BTP used in hand-held extinguishers on board aircraft, which means that 2-BTP would not be prohibited until 13.5 years after entry into force (12 years + 18 months).
- A time-unlimited derogation is proposed for clean fire suppressing agents used for maintenance and refilling of existing fire suppression equipment.

The SEAC draft opinion is open for a public consultation that ends on May 25, 2026. It is scheduled to be finalized by the end of 2026. Once finalized, the SEAC opinion could form the basis of a European Commission proposal for a regulation that would be sent to the European Parliament and Council for final adoption. Based on the current schedule, it seems unlikely that a PFAS REACH restriction regulation could be finalized and enter into force before 2028.

<https://echa.europa.eu/registry-of-restriction-intentions/-/dislist/details/0b0236e18663449b>

Maine and Minnesota PFAS Laws

The Maine and Minnesota PFAS laws prohibit the sale of products containing intentionally added PFAS in 2032. Under the laws the following fire protection agents are PFAS: FK-5-1-12, HFC-227ea, HFC-125, HFC-236fa, HCFC-123 and 2-BTP. Both laws contain provisions for products to be exempted from the sale prohibitions as currently unavoidable uses (CUU). HARC made submissions to Maine and Minnesota with information on important uses of halogenated clean agents that are likely to continue beyond 2032 and suggested they be classified as CUUs.

Under the Maine law, companies can apply to have their products exempted as a CUU starting in 2027. In Minnesota the rules for CUU determinations are under development and expected to be completed by 2028. The Minnesota law also requires manufacturers of products containing PFAS that are sold or offered for sale in Minnesota to report on those products by September 15, 2026.

<https://www.maine.gov/dep/spills/topics/pfas/PFAS-products/>

https://www.pca.state.mn.us/get-engaged/pfas-in-productsea_HFC-125_HFC-236fa_HCFC-123_and_2-BTP_are_PFAS

United States Reporting and Recordkeeping Requirements for PFAS

On October 11, 2023, the US Environmental Protection Agency (EPA) published a final rule under the Toxic Substances Control Act (TSCA) that requires companies that manufacture or import PFAS substances to report to EPA going back to 2011. Any company that was the importer of record

for imports of FK-5-1-12, HFC-227ea or HFC-125 anytime between 2011 and now must report. Companies that already report to EPA on imports of HFCs under the greenhouse gas (GHG) reporting program may not be required to report those imports again under the PFAS program.

EPA published modifications to the October 2023 final rule in September 2024, May 2025 and April 2026, and a proposed rule in November 2025. The latest updates were finalized in April 2026, with the most recent due date for reporting set as January 31, 2027. Additional information on the rule and instructions for reporting can be found at the following link:

<https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/tsca-section-8a7-reporting-and-recordkeeping>

Outlook

The prohibitions on halogenated clean agents as PFAS are still several years away. HARC expects that the scope of proposed prohibitions or other forms of restrictions could change prior to implementation. Some of the current proposals that would regulate all PFAS chemicals as a group are being reconsidered due to the complexity of regulating thousands of substances used in hundreds of industries at the same time. Recent legislation in some US states is targeted at specific uses of PFAS, particularly in consumer products, rather than all PFAS in all uses. In addition, there is continued scientific debate about whether the degradation products of the fluorinated gases that are used as replacements for ozone depleting substances (ODS) and GHGs present the type of significant risk to human health and the environment that would justify a ban on their manufacture and use. HARC will continue to monitor legislative and regulatory activity on PFAS and provide information to environmental authorities on the importance of halogenated clean agents for protecting people and high-value assets from fire.