

FACT SHEET

Proposed Rule - Phasedown of Hydrofluorocarbons: Restrictions on the Use of Certain Hydrofluorocarbons under Subsection (i) of the American Innovation and Manufacturing Act

The American Innovation and Manufacturing (AIM) Act was enacted by Congress on December 27, 2020. The AIM Act authorizes EPA to address hydrofluorocarbons (HFCs) in three main ways: phasing down their production and consumption, maximizing reclamation and minimizing releases from equipment, and facilitating the transition to next-generation technologies through sector-based restrictions. This proposed rule focuses on the third area – the transition to alternatives through sector-based restrictions.

The AIM Act directs EPA to phase down the production and consumption of HFCs by 85% by 2036. The U.S. phasedown is consistent with the schedule in the Kigali Amendment to the Montreal Protocol, which is a global agreement to phasedown HFCs that the United States joined on October 31, 2022. A global HFC phasedown is expected to avoid up to 0.5 degrees Celsius of global warming by 2100. American consumers are expected to benefit from the transition to environmentally safer alternatives and more energy-efficient cooling technologies.

About HFCs

HFCs are potent greenhouse gases (GHGs) intentionally developed as replacements for ozone-depleting substances (ODS) in the refrigeration and air conditioning, aerosols, fire suppression, and foam blowing sectors. They have global warming potentials (GWPs; a measure of the relative climate impact of a GHG) that can be hundreds to thousands of times greater than that of carbon dioxide (CO₂).

What Does This Rule Propose?

Consistent with the AIM Act, EPA is proposing to restrict the use of certain higher-GWP HFCs in aerosols, foams, and refrigeration, air conditioning, and heat pump products and equipment. The proposed restrictions are listed by sector and subsector in Table 1 and Table 2 at the end of this document. The proposed rule would prohibit manufacture and import of products containing restricted HFCs by January 1, 2025, in most cases, and would prohibit the sale, distribution, and export of products containing restricted HFCs a year later, which in most cases would be January 1, 2026.

The AIM Act includes provisions for the public to petition EPA to initiate a rulemaking that restricts the use of HFCs. EPA has granted 12 petitions and partially granted one petition

requesting restrictions on the use of HFCs in various sectors and subsectors. The AIM Act directs EPA to finalize a rule within two years after the date on which the Agency grants a petition. This proposed rulemaking addresses all petitions that EPA has granted thus far. In addition, this proposal includes a description of how EPA intends to implement certain aspects of the program, such as the processing of petitions to restrict the use of HFCs under subsection (i) of the AIM Act.

To support compliance with the proposed prohibitions on the use of HFCs in specific sectors and subsectors, EPA is proposing labeling, reporting, and recordkeeping requirements for companies that import, manufacture, sell, or offer for sale products using HFCs.

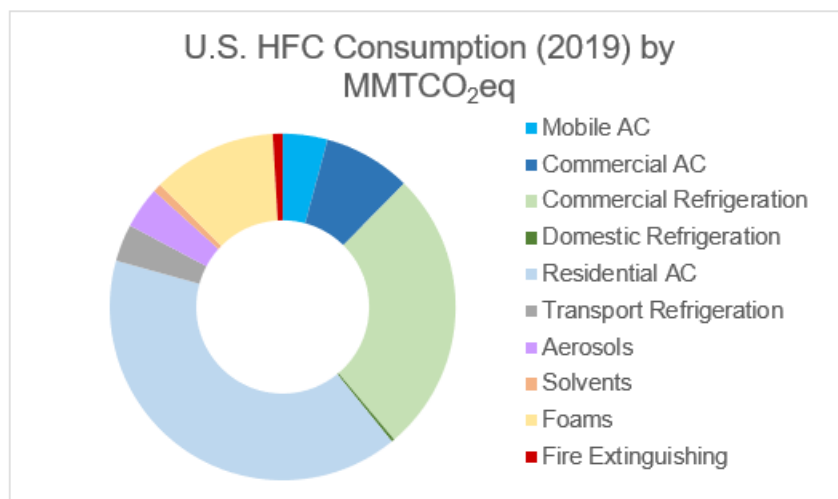
What Sectors and Subsectors Are Covered by the Proposed Action? Are Certain Applications Exempt?

EPA is restricting HFC use in products and equipment in the aerosol; foam; and refrigeration, air conditioning and heat pump sectors. These proposed restrictions are summarized in Tables 1 and 2 below. The proposed restrictions would not apply to any product that receives an application-specific HFC allowance under subsection (e)(4)(B) of the AIM Act. As such, this proposed action does not restrict use of HFCs used in the following:

- As a propellant in metered dose inhalers;
- In the manufacture of defense sprays;
- In the manufacture of structural composite preformed polyurethane foam for marine use and trailer use;
- Etching of semiconductor material or wafers and the cleaning of chemical vapor deposition chambers within the semiconductor manufacturing sector;
- Mission-critical military end uses; and
- Onboard aerospace fire suppression.

Where are HFCs used?

In the United States, HFCs are primarily used in refrigeration and air-conditioning equipment in homes, commercial buildings, and industrial operations and in air conditioning in vehicles and refrigerated transport. Smaller amounts are used in foam products, aerosols, fire protection systems, and solvents.



Source: U.S. EPA, April 2016. EPA Report EPA-430-R-16-002.

Who May Be Affected by This Proposed Rule?

You may be potentially affected by this rule if you manufacture, import, export, package, sell or otherwise distribute products that use or are intended to use HFCs, such as refrigeration and air-conditioning systems, heat pumps, foams, and aerosols.

How Can I Comment on This Proposed Rulemaking?

EPA will accept comments on this proposal for 45 days after publication in the Federal Register and will hold a virtual public hearing after publication in the Federal Register. For more information on the rule and how to comment, as well as information on the virtual public hearing, please visit our website: <https://www.epa.gov/climate-hfcs-reduction>.

What Other Actions is EPA Taking under the AIM Act?

In addition to this proposed rulemaking, EPA has issued a final regulation that established a framework for phasing down HFC production and consumption by 85% by 2036 through an allowance allocation program, “Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program Under the American Innovation and Manufacturing Act” (86 FR 55116, October 5, 2021). In November 2022, EPA issued a proposed rule that would establish the methodology for allocating allowances to produce or consume HFCs for allowances allocated beginning in 2024, “Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years,” (87 FR 66372, November 3, 2022). Additionally, EPA has begun to develop a rulemaking under subsection (h) of the AIM Act, “Management of Regulated Substances,” to maximize reclamation and reduce emissions of HFCs and their

substitutes. For more information on regulatory actions under the AIM Act, please visit <https://www.epa.gov/climate-hfcs-reduction>.

What Are the Benefits of This Proposed Rule?

EPA estimates that the proposed rule, if finalized as written, would result in significant GHG emissions reductions benefits while providing savings to American consumers and industry through energy efficiency gains and lower cost alternatives. The proposal would result in cumulative GHG emissions reductions ranging from 134 to 903 MMTCO_{2e} through 2050. EPA estimates that the cumulative net benefits of this proposed action are between \$13.1 billion to \$56.3 billion from 2025 through 2050.

- The GHG emissions reductions from this proposed action would provide between \$5 and \$51 billion in climate benefits.
- The proposed rule would also save U.S. industry and consumers between \$5 to \$8 billion from 2025 through 2050 as a result of improved energy efficiency in refrigeration, air conditioning, and heat pump products and lower cost alternatives.

The benefits noted here are in addition to those already accounted for in the HFC phasedown and described in the Proposed Rule, “Phasedown of Hydrofluorocarbons: Allowance Allocation Methodology for 2024 and Later Years (87 FR 66372)”.

Table 1: Proposed GWP Limit Restrictions on HFCs by Sector and Subsector

Sectors and Subsectors	Proposed GWP Limit	Compliance Date
Refrigeration, Air Conditioning, and Heat Pumps		
Industrial process refrigeration systems with refrigerant charge capacities of 200 pounds or greater	150	January 1, 2025
Industrial process refrigeration systems with refrigerant charge capacities less than 200 pounds	300	January 1, 2025
Industrial process refrigeration, high temperature side of cascade systems	300	January 1, 2025
Retail food refrigeration – stand-alone units	150	January 1, 2025
Retail food refrigeration – refrigerated food processing and dispensing equipment	150	January 1, 2025
Retail food refrigeration – supermarket systems with refrigerant charge capacities of 200 pounds or greater	150	January 1, 2025
Retail food refrigeration – supermarket systems with refrigerant charge capacities less than 200 pounds charge	300	January 1, 2025
Retail food refrigeration – supermarket systems, high temperature side of cascade system	300	January 1, 2025
Retail food refrigeration – remote condensing units with refrigerant charge capacities of 200 pounds or greater	150	January 1, 2025
Retail food refrigeration – remote condensing units with refrigerant charge capacities less than 200 pounds	300	January 1, 2025
Retail food refrigeration – remote condensing units, high temperature side of cascade system	300	January 1, 2025
Vending machines	150	January 1, 2025
Cold storage warehouse systems with refrigerant charge capacities of 200 pounds or greater	150	January 1, 2025
Cold storage warehouse systems with refrigerant charge capacities less than 200 pounds	300	January 1, 2025
Cold storage warehouse, high temperature side of cascade system	300	January 1, 2025
Ice rinks	150	January 1, 2025

Sectors and Subsectors	Proposed GWP Limit	Compliance Date
Automatic commercial ice machines – self-contained with refrigerant charge capacities of 500 grams or lower	150	January 1, 2025
Transport refrigeration – intermodal containers	700	January 1, 2025
Residential refrigeration systems	150	January 1, 2025
Chillers – industrial process refrigeration	700	January 1, 2025
Chillers – comfort cooling	700	January 1, 2025
Residential and light commercial air conditioning and heat pump systems	700	January 1, 2025
Residential and light commercial air conditioning – variable refrigerant flow systems	700	January 1, 2026
Residential dehumidifiers	700	January 1, 2025
Motor vehicle air conditioning – light-duty passenger vehicles	150	Model year 2025
Motor vehicle air conditioning – medium-duty passenger vehicles	150	Model year 2026
Motor vehicle air conditioning – heavy-duty pick-up trucks	150	Model year 2026
Motor vehicle air conditioning – complete heavy-duty vans	150	Model year 2026
Motor vehicle air conditioning – nonroad vehicles	150	Model year 2026
Foam blowing		
Polystyrene – extruded boardstock and billet	150	January 1, 2025
Rigid polyurethane and polyisocyanurate laminated boardstock	0	January 1, 2025
Rigid polyurethane – slabstock and other	150	January 1, 2025
Rigid polyurethane – appliance foam	150	January 1, 2025
Rigid polyurethane – commercial refrigeration and sandwich panels	150	January 1, 2025
Rigid polyurethane – marine flotation foam*	150	January 1, 2025
Rigid polyurethane – low pressure, two-component spray foam	150	January 1, 2025
Rigid polyurethane – high-pressure two-component spray foam	150	January 1, 2025

Sectors and Subsectors	Proposed GWP Limit	Compliance Date
Rigid polyurethane – one-component foam sealants	150	January 1, 2025
Flexible polyurethane	0	January 1, 2025
Integral skin polyurethane	0	January 1, 2025
Polystyrene – extruded sheet	0	January 1, 2025
Polyolefin	0	January 1, 2025
Phenolic insulation board and bunstock	150	January 1, 2025
Aerosols		
Aerosol products*	150	January 1, 2025

*EPA is proposing an exemption for certain applications as long as they are receiving application-specific allowances under subsection (e)(4)(B) of the AIM Act, including: as a propellant in metered dose inhalers; in the manufacture of defense sprays; and in the manufacture of structural composite preformed polyurethane foam for marine use and trailer use.

Table 2: Proposed Prohibited Substance Restrictions on HFCs by Sector and Subsector

Sectors and Subsectors	Prohibited HFCs	Compliance Date
Refrigeration, Air Conditioning, and Heat Pumps		
Automatic commercial ice machines – self-contained with refrigerant charge capacities more than 500 grams	R-404A, R-507, R-507A, R-428A, R-422C, R-434A, R-421B, R-408A, R-422A, R-407B, R-402A, R-422D, R-421A, R-125/R-290/R-134a/R-600a (55/1/42.5/1.5), R-422B, R-424A, R-402B, GHG-X5, R-417A, R-438A, R-410B, R-407A, R-410A, R-442A, R-417C, R-407F, R-437A, R-407C, RS-24 (2004 formulation), HFC-134a	January 1, 2025
Automatic commercial ice machines – remote	R-404A, R-507, R-507A, R-428A, R-422C, R-434A, R-421B, R-408A, R-422A, R-407B, R-402A, R-422D, R-421A, R-125/R-290/R-134a/R-600a (55/1/42.5/1.5), R-422B, R-424A, R-402B, GHG-X5, R-417A, R-438A, R-410B	January 1, 2025
Transport refrigeration – road systems	R-404A, R-507, R-507A, R-428A, R-422C, R-434A, R-421B, R-408A, R-422A, R-407B, R-402A, R-422D, R-421A, R-125/R-290/R-134a/R-600a (55/1/42.5/1.5), R-422B, R-424A, R-402B, GHG-X5, R-417A, R-438A, R-410B	January 1, 2025
Transport refrigeration – marine systems	R-404A, R-507, R-507A, R-428A, R-422C, R-434A, R-421B, R-408A, R-422A, R-407B, R-402A, R-422D, R-421A, R-125/R-290/R-134a/R-600a (55/1/42.5/1.5), R-422B, R-424A, R-402B, GHG-X5, R-417A, R-438A, R-410B	January 1, 2025



Additional Resources

Protecting Our Climate by Reducing Use of HFCs: <https://www.epa.gov/climate-hfcs-reduction>
 Greenhouse Gas Reporting Program: <https://www.epa.gov/ghgreporting/fluorinated-greenhouse-gas-emissions-and-supplies-reported-ghgrp>
 Contact EPA: spdcomment@epa.gov