



Emissions Reduction and Reclamation Program

epa.gov/climate-hfcs-reduction

FACT SHEET

Final Rule - Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes under Subsection (h) of the American Innovation and Manufacturing Act

What is the AIM Act?

The American Innovation and Manufacturing (AIM) Act was enacted on December 27, 2020. The AIM Act authorizes the U.S. Environmental Protection Agency (EPA) to address hydrofluorocarbons (HFCs) in three main ways: (1) phasing down their production and consumption, (2) promulgating certain regulations for purposes of maximizing reclamation and minimizing releases of HFCs from equipment and ensuring the safety of technicians and consumers, and (3) facilitating the transition to next-generation technologies through sector-based restrictions. This final rule concerns the second area – maximizing reclamation and minimizing releases of HFCs.

About HFCs

HFCs are potent greenhouse gases (GHGs) intentionally developed as replacements for ozone-depleting substances (ODS) in several sectors, including refrigeration, air conditioning, and heat pump and fire suppression. 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 is EPA Finalizing in This Rulemaking?

This is the first final rule under subsection (h), “Management of Regulated Substances,” of the AIM Act, and establishes the Emissions Reduction and Reclamation (ER&R) Program for the management of certain HFCs and their substitutes, including certain provisions that apply to both new and existing equipment. This rule also establishes implementing regulations to control, where appropriate, practices, processes, or activities regarding the servicing, repair, disposal, or installation of equipment that involves certain HFCs and their substitutes. The ER&R Program includes provisions that reduce emissions of climate-damaging HFCs from equipment, such as air conditioning and refrigeration systems, and maximize the amount of HFCs that can be reclaimed. These provisions do not generally require consumers to stop using or servicing their existing equipment.

What is the HFC Phasedown?

The AIM Act directs EPA to phase down the production and consumption of HFCs by 85% from historic baseline levels by 2036. The U.S. phasedown is consistent with the schedule in the Kigali Amendment to the *Montreal Protocol on Substances that Deplete the Ozone Layer*, a global agreement to phase down HFCs, ratified by the United States on October 31, 2022. A global HFC phasedown is expected to avoid up to 0.5 degrees Celsius of global warming by 2100. Maximizing reclamation and minimizing releases of HFCs from equipment supports the domestic phasedown of HFCs.

Who May Be Affected by This Final Rule?

Entities that may be affected by this final rule include those that own, operate, service, repair, recycle, dispose, or install equipment containing HFCs or their substitutes, as well as those that recover, recycle, or reclaim HFCs or their substitutes.

What Are the Costs and Benefits of This Final Rule?

EPA prepared estimates of the costs and benefits of this ER&R action to provide the public with information on the relevant costs and benefits and to comply with Executive Orders. That analysis estimates that this final rule will result in significant GHG emissions reduction benefits while providing cost savings. Over the years 2026–2050, this final rule is projected to prevent an estimated 120 million metric tons of carbon dioxide equivalent (MMTCO_{2e}) in HFC emissions – equivalent to emissions from 23.7 million homes' electricity use for one year – beyond the expected benefits from other rules under the AIM Act. Presently, the net incremental benefits of this rule from 2026–2050 is estimated to be at least \$6.9 billion.¹

What Are Key Provisions of the Final Rule?

Key provisions are outlined below to implement the ER&R Program for the management of HFCs and their substitutes for the refrigeration, air conditioning, and heat pumps sector (RACHP) and the fire suppression sector. EPA has also finalized alternative standards for certain ignitable used refrigerants, including some HFCs and their substitutes, under the Resource Conservation and Recovery Act (RCRA).

¹ Although this estimate utilized social cost of HFC (SC-HFC) estimates for purposes of those analyses, this action does not rely on those values or the resulting quantification of climate benefits as a record basis for this rule, and we would reach the same conclusions in absence of the social costs of HFCs.

Refrigeration, Air Conditioning, and Heat Pumps



Leak Repair

Suite of leak repair provisions for certain refrigerant-containing appliances, including ensuring that applicable leak rates are not exceeded



Automatic Leak Detection

Certain new and existing appliances must install and use ALD systems



Service/Repair with Reclaim

Servicing and/or repair of refrigerant-containing equipment must be done with reclaimed HFCs in supermarket systems, refrigerated transport, and automatic commercial ice makers



Reclamation Standard

Reclaimed HFC refrigerants can contain no more than 15% virgin HFCs, by weight and must be labeled



Disposable Cylinders

Removal of HFCs from certain disposable cylinders prior to discarding them



Recordkeeping, Reporting, and Labeling

For certain provisions

Refer to 40 CFR part 84 subpart C for full requirements.

Fire Suppression



Initial Installation

New fire suppression equipment must be installed with recycled HFCs



Recycle Prior to Disposal

Recycling of HFCs prior to disposal of fire suppression equipment containing HFCs



Servicing and/or Repair

Fire suppression equipment must be serviced and/or repaired with recycled HFCs



Fire Suppression Technician Training

Training for technicians



Recordkeeping and Reporting

For certain provisions



Minimize Releases

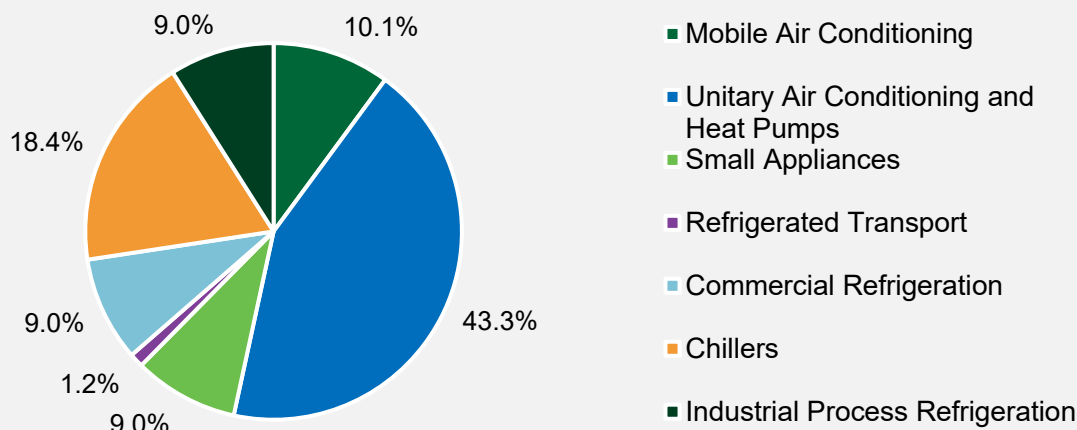
Minimize releases of HFCs during the servicing, repair, disposal, and/or installation of fire suppression equipment that contains HFCs

Refer to 40 CFR part 84 subpart C for full requirements.

Where Are HFCs Used?

In the United States, HFCs are primarily used in the refrigeration, air conditioning, and heat pump (RACHP) sector in appliances used in homes, commercial buildings, industrial operations, refrigerated transport, motor vehicle air conditioning, and more. Approximately 75% of total HFC use occurs in refrigeration and air conditioning equipment in homes, commercial buildings, and industrial operations. The figure below provides the estimated breakdown of HFCs used as refrigerants, in metric tons, contained in various types of installed appliances in the RACHP sector expected in 2025. Unitary air conditioning (AC) and heat pumps (HP) is anticipated to have the greatest volume of HFCs in installed appliances in 2025, as compared to other appliances such as chillers, mobile AC, and industrial process refrigeration (IPR). This includes appliances such as residential air conditioning systems.

Estimated Breakdown of HFCs Used as Refrigerants (in metric tons) in Installed Appliances Expected in 2025



What Other Actions Has EPA Taken Under the AIM Act?

EPA has taken other actions under the AIM Act. For example, EPA established the HFC Allowance Allocation Program phasing down HFC production and consumption by 85% from historic baseline levels by 2036. Additionally, an October 2023 EPA rulemaking under subsection (i) of the AIM Act, the 2023 Technology Transitions Rule, implements sector-based transitions through restrictions on high-GWP HFCs in aerosol, foams, and RACHP products and equipment. For more information on regulatory actions under the AIM Act, please visit the [Protecting our Climate by Reducing Use of HFCs](#) website.

Summary of Final Requirements and Dates in this Rulemaking

These tables are for informational purposes only and should not be relied on for compliance purposes. Please refer to 40 CFR part 84 subpart C for full details. Please refer to 40 CFR part 266 subpart Q for further information on requirements for RCRA alternative standards.

Table 1: Leak Repair^a

Requirements	Compliance Date
Applicable appliances and leak rate thresholds: - Refrigerant-containing appliances^b with a full charge of 15 pounds or more of a refrigerant that contains an HFC or a substitute for an HFC with a GWP greater than 53 must repair leaks to bring leak rate below applicable threshold - Leak rate thresholds^c - IPR: 30% - Commercial refrigeration: 20% - Comfort cooling, refrigerated transport, and other appliances not covered: 10%	January 1, 2026

- a. See regulatory text at 40 CFR 84.106 for further information on leak repair requirements, including applicable leak rates, the timeline for leak repair, and associated recordkeeping and reporting.
- b. Appliances in the residential and light commercial air conditioning and heat pumps sector are not included in these provisions.
- c. Categories of refrigerant-containing appliances related to the applicable leak thresholds are defined at 40 CFR 84.102.

Table 2: Automatic Leak Detection (ALD) Systems^a

Requirements	Compliance Date
New commercial and industrial process refrigeration appliances: Installation and use of ALD systems for appliances installed with a full charge size of 1,500 pounds or more that contain an HFC or a substitute for an HFC with a GWP above 53	Within 30 days of appliance installation, starting January 1, 2026
Existing commercial and industrial process refrigeration appliances: Installation and use of ALD systems for appliances installed on or after January 1, 2017, and before January 1, 2026, with a full charge size of 1,500 pounds or more that contain an HFC or a substitute for an HFC with a GWP above 53	January 1, 2027

- a. See regulatory text at 40 CFR 84.108 for further information on ALD requirements, including the associated recordkeeping requirements for regulated entities using ALD systems.

Table 3: Reclaimed HFCs^a

Requirements	Compliance Date
Reclaimed HFC refrigerants can contain no more than 15%, by weight, of virgin HFCs	January 1, 2026
Servicing and/or repair of certain RACHP equipment with reclaimed HFCs ^b : • supermarket systems • refrigerated transport • automatic commercial ice makers	January 1, 2029
Reporting of certain HFC data by reclaimers and refrigerant distributors who supply reclaimed HFCs in the three affected subsectors	Two-time reporting due February 14, 2027, and February 14, 2028

- a. See regulatory text at 40 CFR 84.112 for further information on the associated recordkeeping and reporting requirements for reclaimers.
- b. For the purposes of the ER&R Program, these subsectors are considered to be consistent with how they are described and considered in other AIM Act rules.

Table 4: Emissions Reduction in Fire Suppression^a

Requirements	Compliance Date
Minimize releases of HFCs during the servicing, repair, disposal, and/or installation of fire suppression equipment that contains HFCs	January 1, 2026
Initial installation of fire suppression equipment with recycled HFCs, where HFCs are used	January 1, 2030
Servicing and/or repair of fire suppression equipment with recycled HFCs, where HFCs are used	January 1, 2026
Required training for fire suppression technicians	By June 1, 2026, or within 30 days of hiring, whichever is later
Recycling of HFCs prior to disposal of fire suppression equipment containing HFCs	January 1, 2026
Reporting of certain HFC data	Report annually by February 14 of each year ^b

- a. See regulatory text at 40 CFR 84.110 for further information on the requirements for fire suppression equipment.
- b. See regulatory text at 40 CFR 84.110(g) for further information on the associated recordkeeping and reporting requirements for covered entities in the fire suppression sector.

Table 5: Refrigerant Removal from Disposable Cylinders^a

Requirements	Compliance Date
Send certain disposable cylinders to either an EPA Clean Air Act (CAA) section 608 certified reclaimer, a fire suppressant recycler, a final processor, such as a landfill operator or scrap metal recycler, or a refrigerant supplier (including, but not limited to distributors and wholesalers) for its remaining contents to be removed	January 1, 2028
Alternative compliance method: An EPA CAA section 608 certified technician evacuates a disposable cylinder to a vacuum level of 15 in-Hg, and provides a certification statement to the final processor	
An EPA CAA section 608 certified or a fire suppressant recycler who receives a disposable cylinder must remove all remaining contents from the disposable cylinder prior to disposal	

a. See regulatory text at 40 CFR 84.116 for further information on requirements for disposable cylinders.

Table 6: RCRA Alternative Standards^a

Requirements	Compliance Date
For facilities receiving ignitable spent refrigerant from off-site to be recycled for reuse: - The reclaimer must maintain EPA CAA section 608 certification - The facility must meet the applicable emergency preparedness and response requirements	January 1, 2025
Refrigerant reclaimers must not speculatively accumulate ignitable spent refrigerants as defined in RCRA	Calendar year beginning January 1, 2029
Ignitable spent refrigerants must be sent to a facility that meets the provisions of RCRA, 40 CFR part 266 subpart Q if sent off-site for recycling	January 1, 2025

a. See regulatory text at 40 CFR part 266, subpart Q for further information on requirements for RCRA alternative standards.



Additional Resources

Managing Use and Reuse of HFCs and Their Substitutes:
www.epa.gov/climate-hfcs-reduction/managing-use-and-reuse-hfcs-and-substitutes

EPA Certified Reclaimers:
www.epa.gov/section608/epa-certified-refrigerant-reclaimers

Contact EPA: HFCEmissionsReductions@epa.gov