

foam blowing, solvents, aerosols, and fire suppression. Although there are currently [34 HCFCs](#) that are subject to the phaseout, only a few are commonly used. Historically, the most widely used include HCFC-22 (usually as a refrigerant), HCFC-141b (as a solvent and foam-blowing agent), and HCFC-142b (as a foam-blowing agent and component in refrigerant blends). [Learn more about common HCFCs and their uses.](#)

Some HCFCs, like HCFC-22, are also a component in refrigerant blends. While these blends are not listed among the 34 controlled HCFCs, they are subject to the same rules because they contain Class II ODS. Common refrigerant blends that contain HCFC-22 include R-401A, R-402A, R-408A, R-409A, R-414B, and R-502A.

The Phaseout of HCFCs

As a Party to the [Montreal Protocol](#), the United States must incrementally decrease HCFC consumption and production, culminating in a complete HCFC phaseout in 2030. HCFC usage must be reduced to at least 90 percent below baseline levels in 2015 and to at least 99.5 percent below baseline levels in 2020.

Section 605 of the [Clean Air Act](#) establishes the U.S. phaseout targets for Class II substances. In 1993, EPA established the [phaseout framework](#) and the "worst-first" approach, which focused first on HCFC-22, HCFC-141b, and HCFC-142b because they have the highest ozone depletion potentials of all HCFCs.

The U.S. schedule for meeting the Montreal Protocol phaseout requirements is summarized in the following table.

Key Resource

Learn about the projected demand for HCFCs in existing air-conditioning and refrigeration equipment in EPA's [2014 Final Report: Projected Servicing Needs in the U.S. Air-conditioning, Refrigeration, and Fire Suppression Sectors, Updated for 2015 to 2025](#)

U.S. Action to Meet the Montreal Protocol Phaseout Schedule

Year to Be Implemented	Implementation of HCFC Phaseout through Clean Air Act Regulations	Year to Be Implemented	Percent Reduction in HCFC Consumption and Production from Baseline
2003	No production or import of HCFC-141b	2004	35.0%
2010	No production or import of HCFC-142b and HCFC-22, except for use in equipment manufactured before January 1, 2010	2010	75.0%
2015	No production or import of any other HCFCs, except as refrigerants in equipment manufactured before January 1, 2020	2015	90.0%
2020	No production or import of HCFC-142b and HCFC-22	2020	99.5%
2030	No production or import of any HCFCs	2030	100.0%

[More about the HCFC Allowance System](#)

Common HCFCs and Their Uses

Common HCFCs include:

- **HCFC-22:** used as a refrigerant in several applications such as unitary air conditioners, cold storage, retail food refrigeration equipment, chillers, and industrial process refrigeration. Also historically used (in smaller quantities) as a blowing agent for certain foam applications and as a propellant in aerosols.
- **HCFC-141b:** used as a blowing agent in rigid polyurethane foams and integral skim foams and in aerosol solvent cleaning applications.
- **HCFC-142b:** used as a blowing agent in extruded polystyrene boardstock. Also used in small quantities in refrigerant blends and as a retrofit refrigerant, such as in motor vehicle air conditioners that previously used [chlorofluorocarbon](#) (CFC)-12.
- **HCFC-123:** used in centrifugal chillers and portable fire extinguishers.
- **HCFC-124:** used in some sterilant mixtures and as a component in some CFC-12 retrofit refrigerants. Can be used as a retrofit to replace CFC-114 in some heat pumps and special air conditioning equipment.
- **HCFC-225ca and HCFC-225cb:** used as a solvent and aerosol solvent. Also historically used in small quantities in adhesives, coatings, and inks.
- **HCFC-21:** used as a refrigerant in highly specialized cooling loops.

The phaseout restricts the use of these HCFCs, and EPA continues to evaluate HCFC alternatives through its [Significant New Alternatives Policy \(SNAP\)](#) program.

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