

Hydrochlorofluorocarbons

Hydrochlorofluorocarbons, or HCFCs, are chemicals that are mainly used as refrigerants in the air-conditioning and refrigeration industries. Unfortunately, releases of HCFCs damage the ozone layer, which shields the Earth from harmful ultraviolet radiation. The United States is one of more than 190 countries to phase out the manufacture of ozone-depleting substances and find alternatives.

Phaseout of HCFC-22 and HCFC-142b

HCFC-22 (or R-22) is often used in air-conditioning and refrigeration equipment. HCFC-142b is also used as a refrigerant, often as a component of a blend. It is sometimes used for foam blowing or as a propellant in aerosol cans. These two HCFCs are being phased out according to the following schedule:

January 1, 2010

Ban on production and import of HCFC-22 and HCFC-142b except for on-going servicing needs of existing equipment

January 1, 2015

Ban on sale and use of HCFC-22 and HCFC-142b except for certain uses, including on-going servicing needs of existing refrigeration and air-conditioning equipment

January 1, 2020

Ban on remaining production and import of HCFC-22 and HCFC-142b

After 2020, the servicing of systems that use R-22 or R-142b will rely on recovered or stockpiled quantities. It is difficult to predict when these supplies will run out. Supplies may be available until almost all equipment containing R-22 or R-142b is retired. However, in the future, supplies will be more limited and costs of HCFCs will likely rise.

What Technicians and Contractors Need to Know About Phasing Out HCFC Refrigerants to Protect the Ozone Layer



EPA Ozone Web Site
<http://www.epa.gov/ozone/>
EPA Stratospheric Ozone Information Hotline
1.800.296.1996

ENERGY STAR Web Site
<http://www.energystar.gov/>

U.S. Environmental Protection Agency
Mail Code 6205J
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460-0001



Disclaimer

EPA promotes energy efficiency and the safe use of ozone-friendly substances, and does not endorse any particular company or its products.

Your Role

As an air-conditioning or refrigeration technician, you play an important role in the phaseout of HCFC refrigerants by installing, servicing, and repairing equipment that may contain HCFCs.

This brochure will help you:

- ❖ Better understand your responsibilities under the regulations,
- ❖ Adapt to changing industry practices, and
- ❖ Provide consumers with appropriate information about the HCFC phaseout.

Servicing Air-Conditioning Systems

- ❖ You must have EPA Section 608 certification to service refrigeration and air-conditioning equipment containing HCFCs.
- ❖ As a best practice, locate and repair leaks instead of “topping-off” leaking systems.
- ❖ It is illegal to intentionally release any refrigerant when servicing, repairing, or maintaining equipment. In most cases, you must use refrigerant recovery equipment during service, maintenance, or repair.
- ❖ You must certify in writing to your EPA Regional Office that you have and will properly use EPA-certified refrigerant recovery and recycling equipment.
- ❖ In some cases, you may recharge equipment with recovered HCFC refrigerants. If the refrigerant is being charged back into the same appliance or to another appliance owned by the same person, the used refrigerant does not need to be recycled or reclaimed.
- ❖ Recovered refrigerant cannot be sold to a new owner; instead, it must be sent to an EPA-certified reclaimer prior to sale.

A **recovered** refrigerant is one that was removed from refrigeration or air-conditioning equipment and stored in an external container without necessarily being tested or processed in any way.

A **recycled** refrigerant has been extracted and cleaned for reuse without meeting the stringent requirements for reclamation.

A **reclaimed** refrigerant has been reprocessed using specialized machinery and tested to meet industry purity standards.

Disposing of Refrigeration and Air-Conditioning Equipment

- ❖ Prior to equipment disposal, you must properly recover HCFCs from existing refrigeration and air-conditioning equipment to help ensure the availability of future supplies, protect the ozone layer, and comply with the law.
- ❖ You may send recovered HCFC refrigerants to be reclaimed or destroyed.

Alternative Refrigerants

- ❖ EPA maintains a list of acceptable and unacceptable substitutes for specific refrigeration and air-conditioning end-uses.
- ❖ Alternative refrigerants generally cannot be used as a “drop-in” replacement in an existing system without modifying the system components.
- ❖ If substitutes are used in converted (retrofitted) equipment that was originally manufactured for use with CFCs, you should be trained on proper retrofit installation and servicing techniques.
- ❖ When purchasing alternative refrigerants, consider the cost, availability, and required equipment. Also check that the refrigerant is acceptable for your expected use and consistent with the equipment manufacturer’s recommendations and warranties.

- ❖ EPA does not require certification for technicians that service appliances with non-ozone depleting refrigerants (for example, R-410A). If you are not sure if a refrigerant is non-ozone depleting, contact EPA or visit www.epa.gov/ozone/.
- ❖ It is illegal to intentionally release any refrigerants, including the alternatives like HFCs (for example, R-410A).
- ❖ There are several acceptable alternatives to R-22 that do not deplete the ozone layer. These include R-134a, R-404A, R-407C, and R-410A. Note that R-410A can be used in new, not retrofitted, residential air conditioners. For more information on substitutes visit www.epa.gov/ozone/snap/refrigerants/.

What Should I Tell My Customers About the Phaseout?

- ❖ The production and import (not use) of the HCFC refrigerants is being phased out both in the United States and worldwide. This phaseout will repair the ozone layer and reduce incidences of skin cancer and cataracts.
- ❖ They are not required to stop using HCFC refrigerants nor to replace existing equipment. However, the available supply of R-22 and R-142b will decrease in the future.
- ❖ EPA has not banned the sale or use of refrigerant and air-conditioning equipment containing R-22.
- ❖ The phaseout period provides time to switch to ozone-friendly refrigerants when they normally would replace their refrigerant and air-conditioning equipment.
- ❖ They should visit the EPA web site at www.epa.gov/ozone/ for more information.