Evaluating options to replace R-22
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EPA reference materials
The U.S. Environmental Protection Agency (EPA) has the following pamphlets available to help explain the phaseout of HCFC-22 to consumers and technicians/contractors.

EPA web site:
www.epa.gov/ozone/title6/phaseout/hcfc.html

Consumers: *Phasing Out HCFC Refrigerants to Protect the Ozone Layer*

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

On September 21, 2007, the Montreal Protocol agreed to accelerate the phaseout of HCFCs.

Developed countries

2010* 75% reduction

2015 90% reduction

2020* Stop production with 0.5%—service only until 2030

**Accelerated phaseout schedule.*

K-16681-2 8/08

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R-22 Update

PLANNING NOW FOR CHANGES IN REFRIGERATION & AIR CONDITIONING

The time to act is now.

DuPont Refrigerants

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Possible R-22 shortfalls as early as 2010

The time to act is now

- Based on U.S. EPA projections of supply and demand, DuPont projects that R-22 supply will be snug by 2010 and a supply shortage is likely by 2015 if current service practices and the reduced availability of reclaimed R-22 remain unchanged.
- Dealers, service contractors and equipment owners should be taking appropriate action now, including implementing a refrigerant management plan to transition away from R-22:
  - Repair all leaks (EPA expects to propose tighter leak limits for refrigeration equipment)
  - Retrofit to alternative refrigerants (e.g., DuPont™ ISCEON® MO29, ISCEON® MO79)
  - Recover and reclaim
  - Recommend new equipment with non-ozone-depleting refrigerants (e.g., DuPont™ Suva® 410A)

Demand

Demand for R-22 in the U.S. continues to grow, both for OEM production and aftermarket service. Key factors impacting this growth:

- Market transition to new equipment with refrigerant alternatives like R-410A has been slower than anticipated.
- The continued predominance of new R-22 equipment has resulted in a greater installed base of R-22 equipment, requiring ever-increasing volumes of R-22 for service.
- U.S. OEMs increased the use of R-22 to meet the higher minimum SEER change from 10 to 13 and this is likely to have a continuing impact on demand until 2010 when R-22 can no longer be manufactured or imported for use in new equipment.

Regulations affecting supply

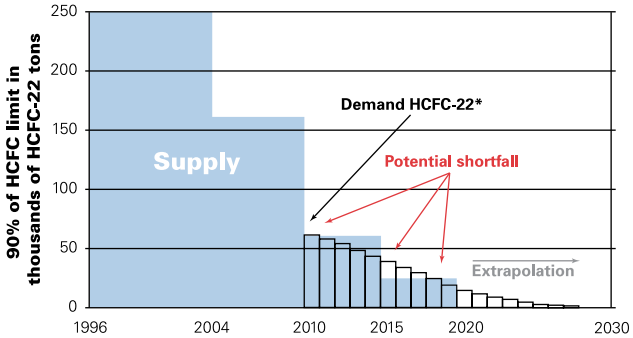
The U.S. Clean Air Act enforcement of the Montreal Protocol includes limiting HCFC consumption[1] to a specific level and reducing the supply of HCFCs in a step-wise fashion beginning January 1, 2004.

- 2003: EPA Final Rule established an allowance system to control the U.S. consumption and production of HCFCs (original "cap"). HCFC-141b phased out.
- 2004: HCFC consumption cap reduced to 65% of the original cap.
- 2010: HCFC consumption cap must be reduced to 25% of original cap per recent Montreal Protocol update.
  - No R-22 can be produced or imported in the U.S. for use in new equipment made after December 31, 2009, per the U.S. Clean Air Act.
- 2015: HCFC consumption cap must be reduced to 10% of original cap; current aftermarket demand exceeds 2015 consumption cap.
  - EPA projects that reclaim R-22 supplies will have to be at least seven times 2004 levels to meet market demand at today's levels.[2]
  - Contractors should be participating in a certified reclaim program for R-22 recovery. Contact your DuPont Refrigerants Distributor for details.

1. Consumption = Production + Import – Export

2. From: "The U.S. Phaseout of HCFCs: Projected Servicing Needs in the U.S. Air Conditioning and Refrigeration Sector," June, 2008

Montreal Protocol Phaseout Schedule for R-22



***Through 2020 EPA June 2008 report. Beyond 2020 DuPont estimate.**

Action you can take now

- Stay up to date on EPA rules and regulations.
- Evaluate options to retrofit existing equipment from R-22 that offer:
  - non-ozone-depletion
  - lowest total cost of ownership
  - energy-efficiency
  - low environmental impact
- Recommend new equipment with alternative refrigerants
- Recover all refrigerants and return through a certified reclaim program
  - Contact your DuPont Refrigerants Distributor
  - Contact DuPont (U.S.): 1-800-235-7882
- Alternative refrigerants readily available for retrofit

2010 R-22 supply and demand estimate

Supply estimate based on accelerated Montreal Protocol*	62,345 MT
EPA estimated demand**	62,500 MT

Note: Shortfall possible if actual demand exceeds EPA projections.

**Represents 90% of the HCFC cap assigned to R-22*
***http://www.epa.gov/ozone/title6/phaseout/ServiceNeedsRevisedDraftReport_June.2008.pdf*

Refrigeration	Air conditioning
ISCEON® MO29 (R-422D)	Suva® 407C (R-407C)
ISCEON® MO79 (R-422A)	ISCEON® MO29 (R-422D)
	ISCEON® MO59 (R-417A)