



Evaluating options to replace R-22

Visit: isceon.com

EPA web site:

www.epa.gov/ozone/title6/phaseout/index.html

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

Developed countries

2010* 75% reduction - Final Rule issued December 2009, reduces R-22 production and imports by 58% in January 2010 and further reduces supply by 10-13% per year through 2014

2015 90% reduction

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

**Accelerated phaseout schedule.*

DuPont celebrates 80 years in the refrigerants business and over 200 years as a corporation!

In 2010, DuPont celebrates 80 years in the refrigerants industry. DuPont is recognized for its history of leadership and innovation that are cornerstones of our business and the important role we've consistently played during times of critical industry transition.



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R-22 Update

PLANNING NOW FOR
CHANGES IN REFRIGERATION
& AIR CONDITIONING



The time to act is now.

DuPont™
ISCEON® M099™
refrigerant

The Quick Switch to Replace R-22*

*See Retrofit Guidelines Before Using



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Possible R-22 shortfalls as early as 2010

Supply for R-22 is decreasing

In 2010, R-22 service demand will exceed allowed virgin R-22 supply by 27.5 million pounds. This projection is based upon the latest EPA demand projections and final HCFC allowance rule issued December, 2009. A significant hydrochlorofluorocarbon (HCFC) stepdown occurred on January 1, 2010, as a result of the more aggressive phasedown of HCFCs agreed to under the Montreal Protocol. The R-22 supply was reduced by 58% in 2010 and will ramp down 10-13% per year from 2011 through 2014.

Demand for R-22 remains strong

- The U.S. installed base of R-22 for air conditioning and refrigeration is estimated at over 900 million pounds per year.
- Business as usual is no longer an option. If service practices do not change significantly, demand will exceed supply by 27.5 million pounds per year.
- R-22 cannot be used in new equipment as of January 2010, however, the transition to new equipment with refrigerant alternatives like R-410A is slowed due to global recession, with many equipment owners delaying purchase of new equipment.

Action you can take now

- Choose to retrofit existing equipment from R-22 to low cost R-22 replacement refrigerants like DuPont[™] ISCEON[®] MO99[™] that offers:
 - no ozone depletion
 - lowest total cost of ownership
 - comparable energy efficiency to R-22
 - similar pressure enthalpy characteristics to R-22
 - low environmental impact
- DuPont[™] ISCEON[®] MO99[™] is approved for use by Copeland for Copeland Discus[®] compressors in supermarket applications
- Recommend new equipment with non-ozone depleting refrigerants, such as R-404A and R-410A
- Recover all refrigerants and return through a certified reclaim program
- Contact your DuPont Refrigerants Distributor for recommendations concerning HFC refrigerants readily available for retrofit

To locate a distributor nearest you,

Contact: 1-877-683-3566

www.isceon.com

Regulations affecting supply

The U.S. Clean Air Act enforcement of the Montreal Protocol includes limiting HCFC consumption¹ to a specific level and reducing the supply of HCFCs in a step-wise fashion. The next significant step in the R-22 phaseout implemented January 2010 further reduced the supply of R-22 by 58%. Below is a list of the regulations impacting R-22 supply:

- 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 was 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 manufactured after December 31, 2009, per the U.S. Clean Air Act.
 - Final rule issued December 2009, ramps down R-22 supply by 10-13% per year from 2011 through 2014.
 - EPA projects that reclaimed and recycled R-22 will have to be 20% to meet service market demand. In 2009, EPA estimated reclaim and recovery to be 5-7% per year.

- 2015: HCFC consumption cap must be reduced to 10% of original cap; current aftermarket demand exceeds 2015 consumption cap.
 - EPA projects that reclaimed R-22 supplies will have to increase to 29% (at least seven times 2004 levels) to meet projected market demand.²
 - Contractors should be participating in a certified reclaim program for R-22 recovery. Contact your DuPont Refrigerants Distributor for details.

Dealers, service contractors and equipment owners should be taking appropriate action now, including implementing a refrigerant management plan to transition away from R-22

A refrigerant management plan should include:

- Repair all leaks
- Recover and reclaim
- Retrofit existing equipment to alternative refrigerants such as DuPont[™] ISCEON[®] MO99[™] and recover and recycle or reclaim R-22 to service other equipment
- Recommend new equipment with non-ozone depleting refrigerants such as DuPont[™] Suva[®] 410A

DuPont Refrigerants Reclaim Program details

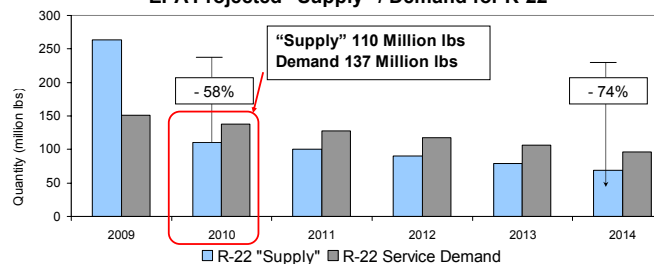
As a product steward, DuPont Refrigerants is committed to provide products and services to assist our industry to move away from HCFCs, in particular R-22, to environmentally sustainable solutions like DuPont[™] ISCEON[®]. DuPont has a reclaim program available to our network of refrigerant distributors. This program allows distributors an opportunity to offer services to take back used refrigerants from their customers. Our program is designed to be easy, convenient, and reliable.

With the accelerated phaseout of HCFCs, demand is projected to exceed supply in 2010 and each year thereafter, through 2014 by 27.5 million pounds; therefore, reclaimed R-22 will become a vital part of supply.

To find the DuPont Authorized Refrigerant Reclaim center nearest you, call 877-MNAGE-22 (877-662-4322) or visit refrigerants.dupont.com/manage22.

2010 HCFC Allocation Final Rule

EPA Projected "Supply" / Demand for R-22



Total "supply" decreases each year
Annual "gap" stays at 27.5 million pounds through 2014

Source: <http://www.epa.gov/ozone/title6/phaseout/rulesoverview.html>

R-22 Estimates based upon EPA Projections in lbs

2010 Supply estimate adjusted to EPA Proposed Allowance Role ³	110 Million
2010 Demand estimate from U.S. Projected Servicing Needs ²	137 Million

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
³ Based on December 23, 2008 EPA Allocation Draft Proposal to set HCFC limits to meet phasedown caps under the Montreal Protocol.

DuPont R-22 Replacement Refrigerants

Refrigeration	Air conditioning
ISCEON [®] MO99 (R-438A)	ISCEON [®] MO99 (R-438A)
ISCEON [®] MO79 (R-422A)	ISCEON [®] MO59 (R-417A)
ISCEON [®] MO29 (R-422D)	Suva [®] 407C (R-407C)
Suva [®] 407A (R-407A)	Suva [®] 410A (R-410A)
Suva [®] 404A (R-404A)	