



## REFRIGERANTS FOR SUSTAINABLE DESIGN

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Why more companies are  
switching to R-410A units now

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*Innovation never felt so good.™*

# SMARTER FOR BUSINESSES AND THE ENVIRONMENT: MAKING THE MOVE NOW TO R-410A

## What companies should know about R-410A:

R-22 contains chlorine that can contribute to global warming and ozone depletion. The newer R-410A refrigerant is considered more ozone-responsible.

The U.S. Clean Air Act and Canadian Environmental Protection Act require manufacturers to stop producing equipment that utilizes HCFC (chlorine-containing) refrigerants such as R-22 by January 1, 2010.

The U.S. Clean Air Act and Canadian Environmental Protection Act requires phasing out production of R-22 by January 1, 2020. They also severely reduce current production in 2010 and 2015.

Production caps are expected to increase R-22 servicing costs in the next few years. Switching immediately to R-410A units helps avoid this problem.

Using many of the R-22 drop-in replacement refrigerants can lead to a reduction in cooling capacity and energy efficiency.<sup>1</sup>

*"With the production caps on HCFCs in place, the EPA has asserted that without an extensive reclamation process in place, there may be a shortage at some point. So 2015 might be tight."*

Karim Amrane, Director of Regulatory and Public Policy, Air-Conditioning and Refrigeration Institute, Arlington VA

*In reference to 2015, Kevin O'Shea writes that... "At that time, the cap will drop from 35% to only 10% of the original HCFC cap. That indicates the potential for a pinch point in the supply, since DuPont estimates current aftermarket demand at approximately 20% of the original cap."*

Kevin O'Shea, Marketing Manager, North America, DuPont Refrigerants, Wilmington, DE

Source: Anne Vasquez. "Refrigerant Phase Outs; What Do They Mean to Facilities." *Today's Facility Manager*, May 2006.

With the growing popularity of sustainable design, many business owners are choosing to buy HVAC systems that use HFC refrigerants such as R-410A, a non-chlorine-containing refrigerant that is considered more ozone-responsible. Yet there's more to that choice than environmental concern. Units that use R-410A can also help companies:

- Control operational costs by getting the full value out of their systems
- Avoid expensive maintenance on units that use outdated refrigerants
- Take advantage of the latest efficiency standards to control energy bills

Many advanced HVAC systems now use R-410A, giving businesses a wide range of choices.

## R-22 servicing costs may be rising

In accordance with the Montreal Protocol, the U.S. and Canadian governments have passed laws to phase out HCFC refrigerants such as R-22 and the equipment that uses it. Specific legislation includes the U.S. Clean Air Act, 1990 and the Canadian Environmental Protection Act, 1999 (Ozone-depleting Substances Regulations, 1998).

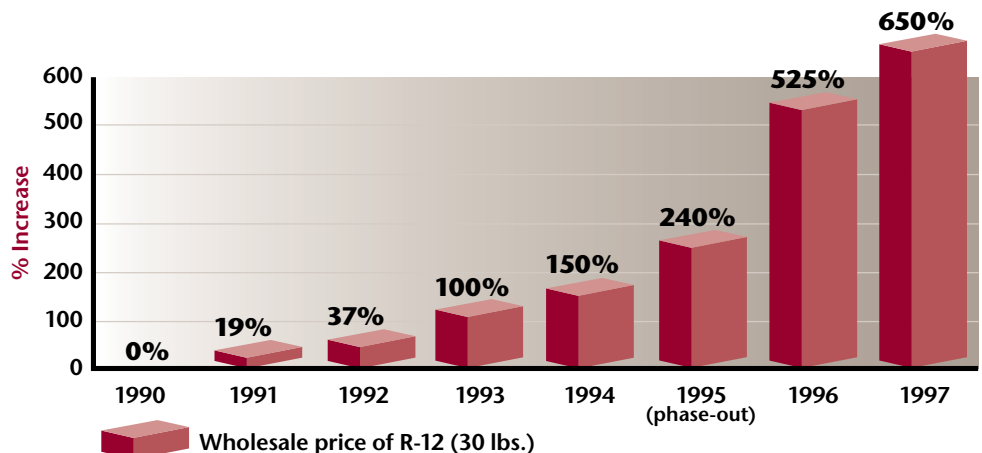
With production of R-22 units being phased out by January 1, 2010, there is also less of the refrigerant being produced. In fact, by 2010 the Montreal Protocol requires countries to have reduced HCFC refrigerant production (R-22) by 65%. By 2015, they will have reduced HCFC refrigerant production (R-22) by 90%, greatly lowering the amount available for servicing. Some industry experts believe that demand will greatly exceed supply around 2015. When this happened in other industries, customers saw significant increases in related costs.

On average, HVAC systems last for 15 years,<sup>2</sup> so units purchased in 2007 may be in use in 2022, long past the phase-out of R-22 equipment and refrigerant. Installing a new R-410A unit means realizing the full life of the equipment without concern over future availability of R-22 and necessary service components.

## HISTORICAL DATA

### Phase-Out of R-12 in Automobiles

Costs of a phased-out refrigerant can rise dramatically. This chart shows the increase in cost for R-12, the refrigerant that was used in automobile air conditioners. Replacing old systems with R-410A units now can help protect customers against potentially higher costs for servicing R-22 units.



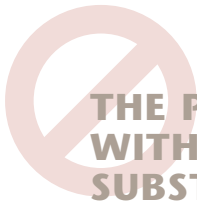
Source: U.S. Environmental Protection Agency (EPA)

# INSTALLING R-410A UNITS CAN HELP REDUCE TOTAL COST OF OWNERSHIP

## Newer units are more efficient

Today's R-410A units are significantly more efficient than many older systems, allowing organizations that install them to better control their energy usage. The highest efficiency equipment carries the ENERGY STAR® label. Installing these advanced, extra-efficient systems will help businesses improve occupants' comfort while controlling monthly energy bills.

As R-410A contains no chlorine, it meets the Environmental Protection Agency's newest, most stringent environmental guidelines. Lennox has developed a complete line of R-410A rooftop units and split systems in a wide range of tonnage capacities and configurations, including many that are ENERGY STAR qualified.



## THE PROBLEM WITH REFRIGERANT SUBSTITUTES

Rising R-22 costs have encouraged some businesses to look for non-HCFC, drop-in refrigerant substitutes they can use in existing equipment.

**Caution:**  
These drop-in refrigerant replacements may reduce cooling capacity and efficiency.<sup>1</sup>

So-called "drop-in" refrigerants can lead to comfort problems due to reduced cooling capacity and higher energy bills as a result of lower energy efficiency. In the end, the cost may actually be higher than purchasing new R-410A equipment.



<sup>1</sup> Honeywell R-22 Allocation Brochure G-525-109

<sup>2</sup> Chain Store Age Magazine, Leo J. Shapiro & Associates, 2004

## LENNOX OFFERS A FULL LINE OF R-410A PRODUCTS



- S-Class™ rooftop units
- L Series® rooftop units
- S-Class air conditioners and heat pumps
- T-Class™ air conditioners and heat pumps
- CBX32M air handlers
- CBX27UH air handlers
- CBX26UH air handlers

## HCFC PRODUCTION

In accordance with the U.S. Clean Air Act and Canadian Environmental Protection Act

- 2010 65% reduction\* (35% available)
- 2015 90% reduction\* (10% available)
- 2020 99.5% reduction\*

\*Relative to maximum production levels as required by the Montreal Protocol.

Source: U.S. Environmental Protection Agency (EPA)

# SOLUTIONS FOR CUSTOMIZED COMFORT



Don't just choose a Lennox® product...choose a Lennox Commercial Comfort System. These complete packages of HVAC solutions provide tools to create a healthy and comfortable environment.

## Packaged Units

- S-Class™ Rooftop Units
- L Series® Rooftop Units
- T-Class™ Rooftop Units

## Split Systems

- S-Class Air Conditioners/Heat Pumps
- T-Class Air Conditioners/Heat Pumps
- Air Conditioners/Heat Pumps
- Air Handlers
- Indoor Coils

## Heating

- T-Class Unit Heaters
- Unit Heaters
- Duct Furnaces
- Furnaces

## Indoor Environmental Quality

- Humiditrol® Dehumidification System
- Humidity Sensors
- Demand Control Ventilation
- Energy Recovery Ventilators/Systems
- Air Filters
- UV Lights

## Commercial Controls

- L Connection® Network
- Sectra® Commercial Zoning System
- Systems Integration Solutions
- Commercial Thermostats



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