HEATING & COOLING PRODUCTS

R410AANSWERS

Answers to your questions about air conditioners & heat pumps designed for the refrigerant of the future.

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A White Paper from International Comfort Products, LLC

Refrigerant R410A:

Are You Ready to Make The Change?

Should You Buy an R410A Air Conditioner or Heat Pump?

In the heating and cooling industry, change is inevitable. From equipment to rules and regulations, the HVAC industry continually changes to improve products and services that directly affect the way we live and feel.

Taking the lead in industry improvements, International Comfort Products ("ICP") is making changes today to not only improve home comfort and efficiency, but also to protect the environment.

It began 12 years ago when lawmakers implemented regulations demanding more environmentally sound refrigerants for heating and cooling products.

In response, ICP began research and discovered R410A, a refrigerant that doesn't release ozone-depleting chlorine emissions. Using this environmentally sound refrigerant, ICP made changes to incorporate R410A into its high performance heating and cooling product lines.

ICP made these changes for homeowners, just like you, who want comfortable homes at affordable prices while protecting the environment for future generations. Now, are you ready to make the change?

Changing your home heating and cooling system is a big decision, so this brochure is designed to help you learn all you can before you decide which option is right for you. There are a few questions you'll want to ask before you purchase R410A heating and cooling equipment.

Are These Changes Really Necessary?

The most common refrigerant used in heating and cooling equipment is R-22, which contains chlorines that can be harmful to the earth's ozone layer.

The ozone layer is made of molecules that protect the earth by shielding it from the sun's harmful rays, especially ultraviolet B (UV-B). Without this shield, scientists predict a significant increase in skin cancer, cataracts and health and environment problems caused by overexposure to the sun's ultra-violet radiation.

How Did these Changes Come About?

In 1987, worldwide leaders implemented the Montreal Protocol to reduce the production of chlorofluorocarbons (CFC), which can damage the earth's protective ozone layer.

In 1990, the United States Congress amended the United States Clean Air Act to control and limit the production of CFC and HCFC refrigerants.

When will R-22 Products Become Obsolete?

The Montreal Protocol is currently targeting the phase-out of HCFCs, including R-22, the most commonly used refrigerant in residential HVAC products.

According to the timetable, manufacturing of products that use chlorine-based refrigerants must stop by the year 2010. By 2020, R-22 can no longer legally be produced, and R-22 must be completely phased-out by the year 2030.

Will the Price of R-22 Really Skyrocket?

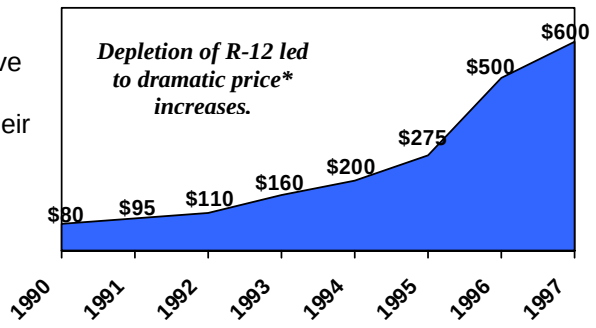
Experts expect the results of R-22 phaseout will be similar to the phaseout of chlorofluorocarbons. Chlorofluorocarbons, such as R-12, were targeted in the first phase of refrigerant

Phaseout of HCFCs	
Date	**Restriction**
1/01/1996	Production of HCFC is capped at 15 million tons per year.
1/01/2004	Production of HCFC drops 23 percent below 1998's total refrigerant demand – capped at 10 million tons per year.
1/01/2010	Production of equipment using HCFC is banned, and HCFC production are halted at baseline levels; HCFC refrigerants are only available for products manufactured prior to January 1, 2010.
1/01/2020	R-22 can no longer be produced, but reclaimed refrigerant can be used.
1/01/2030	Total phaseout of HCFCs is complete.

elimination, because they caused the most damage to the environment. By 1996, all manufacturing of R-12 was prohibited.

Suffering the greatest impact from the elimination, the automotive industry experienced considerable cost increases for automobile air conditioning units using R-12. Many automobile owners chose to sell their cars rather than pay for the costs of repairing a vehicle using R-12.

Homeowners now face a situation similar to the demand and price increases for automotive refrigerant. As the production of R-22 decreases and the demand for R-22 increases, homeowners will experience dramatic price increases for the refrigerant. Homeowners who purchase R410A air conditioners and heat pumps now will increasingly benefit from the latest in heating and cooling technology, as well as more affordable service costs.



* Per 30-pound cylinder

Why Is Refrigerant So Important?

Refrigerant plays a key role in keeping your home comfortable. Refrigerant works by capturing heat from one place, and releasing it somewhere else. For example, an air conditioner transfers the heat from inside your home to blow hot air outside and blow cold air inside. R10A captures heat and releases it even better than R-22. In fact, manufacturers found that they needed less refrigerant in an R410A air conditioner than they need in an R-22 air conditioner.

Why Is R410A a Good Replacement?

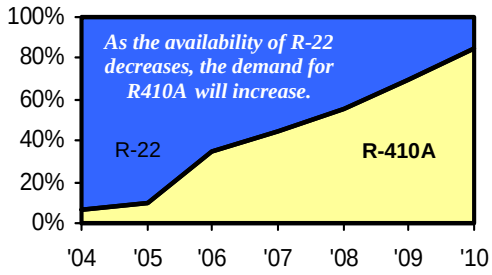
R410A is a blend of hydrofluorocarbon (HFCs) substances that do not contribute to depletion of the ozone layer. R410A's low flammability and low toxicity make it as safe as R-22, and have earned its approval under the EPA's Significant New Alternative Policy ("SNAP") guidelines.

Is R410A The Only Alternative to R-22?

Several refrigerants have been proposed as replacements for R-22, but every major air conditioner manufacturer in the U.S. has selected R410A to replace R-22 in new equipment because of its similar operation to R-22 refrigerant.

Will R410A Products Cost More than R-22?

The purchasing price of R-22 products is currently lower than R410A products, but the total-life costs will continue to increase as R-22 becomes scarce. Already, production of HCFCs must be cut by 35 percent in 2004. As R-22 refrigerant becomes less available, its cost will continue to escalate. As the availability of R-22 decreases, the demand and affordability for R-410A products will continue to increase.



Are R410A Products Safe and Reliable?

R410A products can actually be more durable and reliable than R-22 products because they are made with a thicker compressor shell, heavy-duty design and heavier-duty piping. R410A products are also designed for higher operating pressures and have been rigorously tested to ensure safety and quality performance.

Will an R410A Air Conditioner or Heat Pump Last as Long as an R-22 Model?

ICP R410A air conditioners are manufactured with the latest technology, more durable parts and a superior lubricant to provide years of worry-free operation. These R410A air conditioners and heat pumps utilize smaller, heavier-duty "scroll-type" compressors that are quieter and operate with less damaging vibration than older reciprocating compressors that operate on R-22. The risk of burnout from overheating is reduced on compressors with R410A, because R410A absorbs and releases heat more efficiently than R-22.

R410A air conditioners also use a synthetic lubricant that mixes and circulates more efficiently than the lubricant required for R-22. The new synthetic oils used in R410A air conditioners help reduce wear, extend life, and protect against breakdown under extreme stress and heat.

Why Should I Consider an ICP Product for R-22 Replacement?

Over the past 12 years, ICP has taken a leadership role in the heating and cooling industry's efforts to develop and test new refrigerants. ICP invested a considerable amount of time, along with millions of dollars in research and development, to bring R410A products to the market. Company efforts include: