NATIONS
RESIDENTIAL SERVICE
SEPTEMBER 2008

Sharon Harrison
Founder / President

Dear Homeowner,

The July newsletter explains the REFRIGERANTS time line (Montreal Protocol created in 1987) concerning the elimination of the chemical:

CFC (Chlorofluorocarbons)

The United States implemented the international protocol through Title VI of the Clean Air Act, implemented by the Environmental Protection Agency.

A 1992 amendment to the protocol added the phase-out of HCFC (hydro chlorofluorocarbons). The HCFC that we are discussing is R-22, or we know it by the brand name FREON. It contains chlorine which is the main culprit in destroying the ozone layer, that protects our beautiful earth and living things from harmful rays of the sun. R-22 contains a product, HFC-23, that contributes to global warming.

As Realtors and homeowners, we are concerned with these regulations because we sell houses. As home warranty companies, we are concerned because we repair and replace HVAC units (Heat, Ventilation, and Air Conditioning). What we also must remember is that R-22 is used in everything: apartment buildings, commercial buildings, and manufacturing plants all over the world.

Imagine: That before 1987- for 40 years- FREON was not recaptured- just released into the atmosphere!

Most people only have a slight idea of how an HVAC unit works. If you will bear with me, I would like to explain it to you.

Basically FREON (R-22) changes from a liquid to a gas in a process that creates cold air.

FREON (R-22) acts like water, which exists as liquid water at low temperatures and as steam vapor in high temperatures. You put a pan of water on heat and it turns into steam at 212 degrees Fahrenheit.

FREON (R-22) acts the same as water except it “boils” into vapor below room temperature, which allows it to bring the air temperature in your house down to a comfortable level.

Your HVAC (Heat, Ventilation, and Air Conditioning) system is composed of four main components:

1. Condenser that sits outside of your home

2. Copper tubing that goes from the condenser to the

3. Evaporator coil inside your attic

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4. A copper tube that returns to the condenser

The FREON R-22 (liquid) starts in the condenser, flows through the copper tubing into the evaporator coil. Hot air from your house flows over the evaporator coil which is located in your return air duct. The FREON (R-22) runs through the long winding path of tubes in your evaporator coil. When the hot air goes over those tubes the cold FREON (R-22) draws the heat out of the air, and that heat turns the FREON (R-22) into a vapor in the return tube.

The tubes draw so much heat out of the air that the air flowing from the evaporator coil into your house is 20-30 degrees colder than the air in the duct going to the evaporator coil. The FREON (R-22) which is now vapor, goes through the copper tube into the condenser unit and the compressor inside the condenser turns it back into liquid. And the beat goes on!

That is why it is so important to have the HVAC system air tight so that no FREON can leak into the atmosphere. And, the unit must be clean so that both the FREON and the AIR can flow properly.

The 1987 MONTREAL PROTOCOL was created by the major countries of the planet and every country has made its own decisions on how and when to eliminate CFC and HCFC.

Here is the United States of America's plan regulated by the Department of Energy:

1994- All new equipment has to be at least a 10 SEER (Seasonal Energy Efficiency Rating) or higher.

2004- Production of R-22 must be only 35% of 1989 consumption level. FREON that is recovered can go back to the manufacturer to be reconstituted to the quality of the original FREON (R-22) and reused.

2006- All new equipment has to be at least a 13 SEER or higher.

2010- January 1

Production of R-22 must be only 25% of 1989 level of consumption. FREON that is recovered can go back to the manufacturer to be reconstituted to the quality of the original FREON (R-22) and reused.

Illegal to use FREON (R-22) in any new air conditioning equipment (must be R-410a).

2015 - Production of R-22 must be only 10% of 1989 consumption level. FREON that is recovered can go back to

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the manufacturer to be reconstituted to the quality of the original FREON (R-22) and reused.

2020- Production of R-22 must end. FREON that is recovered can go back to the manufacturer to be reconstituted to the quality of the original FREON (R-22) and reused.

What this means is that the cost of R-22 will get higher and higher in price. Today the cost of R-22 is up 300% from where it was 5 years ago, from $25 a can to over $100 a can.

Let's talk about refrigerant R-410A.

1. Carrier A/C Manufacturer got together with a chemical company and a compressor manufacturer to develop PURON. Carrier's trade name for R-410a refrigerant. Now it comes in many different names (GENETRON or AZ 20) and I am sure more corporations will quickly get in the game.

2. One of the new lubricants in R-410a is a chemical POLYOLESTER, which reminds me of the old 60's bell bottoms.

3. Because these chemicals have to work at much higher pressures, the existing equipment is often not strong enough for R 410a; therefore, you may need new equipment to use R-410a.

4. HVAC contractors have to go back to school- expensive- and learn how to use the new R-410a safely. Also, they have to buy new tools and gauges.

5. While investigating this article it was noted: While Carrier recommends replacing the evaporator whenever a PURON condensing/outdoor unit is installed on an existing system, the manufacturer does not absolutely require it. It depends on the pressure rating of the evaporator coil. You do need a change in metering devices. So shop wisely and ask questions and get bids from other companies.

Advantages of new equipment:

1. Higher efficient ratings.

2. Units are quieter.

3. Reduction of Cooling bills because of the better efficiency.

4. Changing now can save money when servicing and repairing R-22 systems.

5. There are tax incentives that are offered by the federal government, Check IRS.com.

6. Prevents greenhouse gas emissions and prevents the destruction of the ozone layer- these are benefits for our Grandkids!

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Basically your older System is an endangered species.

Please feel free to share this information with your friends.

References: epa.gov/Ozone/title6/phaseout/22phaseout.html

wikipedia.org/wiki/R-410A

wikipedia.org/wiki/Chlorodifluoromethane

PEST TIPS

Spring has come and gone, and the hot months of summer are here! The Occasional Invaders will be looking for a place to get out of the Texas heat.

It is this time of year that spiders, house ants and all the other pesky insects that live around the perimeter of your home will be looking for a nice cool place to take up habitat. As a homeowner, you can help prevent this by cutting back the foliage around the home.

You may also want to call NATIONS and set up a general pest service as a preventive measure before the insects become a problem.

P.S. Nations Home Warranty is one of the few home warranty companies to offer pest coverage and termite coverage during the renewal period. We are headquartered in Texas and understand Texas needs.

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