

Which gas is used in AC: learn the basics, save the environment!

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Most people use air conditioners to stay cool and comfortable especially in summer time. Air conditioning systems employ refrigerant which is a fluid/gas/liquid to absorb the heat from the room and leaves the hot air out in the environment. It might be interesting to know that without refrigerant, there would be no air conditioning, refrigeration or freezing technology. Now as some refrigerants are harmful for the environment and have the potential for global warming, you may wonder which gas is used in your air conditioner. Follow this new blog at Linquip to learn which gas is used in AC .

What is a refrigerant?

A refrigerant is a fluid that is used in air conditioners and refrigerators, to take heat from the contents of a refrigerator or the room (in the case of ACs) and throw the heat out in the atmosphere. A refrigerant undergoes phase changes from a liquid to gas (on absorbing heat) and back to liquid (when a compressor compresses it). The choice of ideal refrigerant is made based on its favorable thermodynamic properties, non-corrosive nature, and safety (non-toxic and non-flammable).



Types of Refrigerants

Let's find out which gas is used in AC over the years.

- **Chlorofluorocarbons (CFCs):** The most common refrigerant in the past was a CFC, most commonly called as Freon. Freon was a brand name for a refrigerant "R-12" by Dupont. The manufacturing of CFCs was discontinued in 1994 as the CFCs are one of the main reasons for greenhouse gas effect and depletion of ozone layer.
- **Hydrochlorofluorocarbons (HCFCs):** In the 1990s and 2000s, the CFCs were replaced with HCFCs (hydrochlorofluorocarbon) and the most common HCFC is "R-22". R-22 is just slightly better than CFC as it contains chlorine. However, it is harmful to the environment and also has ozone depletion potential.
- **Hydrofluorocarbons (HFCs):** To remove chlorine from the refrigerant, manufacturers created another set of refrigerants called HFCs (or HydroFluroCarbons). Although they also have the potential for global warming, they are still better than HCFCs as they do not deplete the ozone layer. The most common HFC used in air conditioners is R-410A. This refrigerant is better than R-22 in terms of Ozone Depletion potential and energy efficiency, but it still causes global warming. A few more HFCs that are commonly used are: R-32 in Air Conditioners and R-134A in refrigerators.

- **Hydrocarbons (HC):** The most environment-friendly refrigerants that are available in market currently are “R-290” and “R-600A”. They are HC or Hydrocarbons, and their chemical names are “Propane” for R-290 and “Iso-Butane” for R-600A. They are completely halogen free, have no ozone depletion potential and are lowest in terms of global warming potential. They also have high-energy efficiency but are highly flammable as they are hydrocarbons, they are also the greenest refrigerants in the market. Manufacturers who use these refrigerants, claim that they have taken good care in using these refrigerants and the appliances are absolutely safe to environment. It may be interesting to know that air conditioners that run on R410A are more efficient, offer better air quality, increase comfort and improve reliability.



How to secure the future

As noted, if your system was manufactured after 2003, it probably uses a safer refrigerant than R12. If produced after 2010, it definitely uses a different refrigerant for cooling. As human beings, we have a responsibility to secure the future of the coming generations. Reducing global warming and eliminating ozone layer depletion should be our endeavor. To achieve this objective, you should start using ACs using environment-friendly refrigerants like R-290. As people begin using these appliances more, the demand for such ACs and refrigerators will increase. It will prompt manufacturers to switch over to these refrigerants from the CFCs, HCFCs, and the HFCs. It will benefit the environment as a whole. R-290 and

R-600A are the future of Refrigerants. If you are looking to buy an Air Conditioner, Make sure you opt for the model that is not only energy efficient but also eco-friendly. The more you opt for it, the more the manufacturers will start using them in their appliances. Hopefully, with stringent standards and better advancements in technology, we will be able to see better refrigerants in future.

So now that you found out which gas is used in AC, feel free to share your experience with different AC refrigerants in Linquip and let us know what you think by leaving your idea in the comment section. Is there any question we can help you with? [Click here to sign up](#) on our website where our experts waiting to give you the professional advise you need.

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