



The refrigerants R134a and R410a were both introduced as eventual replacements for more environmentally harmful chlorofluorocarbon-based refrigerants. These refrigerants are intended for different applications, but the proper use and handling of both are controlled by the Environmental Protection Agency.



R134a



- Northern Air prefers 134a refrigerants
- R134a is a pure refrigerant that is sometimes used in blends
- ASHRAE standard recommends 134a in Bus, Rail Car, Automotive & any environment that sees extreme temperature swings



R410a

- Commercial units use mostly 410a and 407c
- R410a is a blend

Details

R134a refrigerant was developed to replace R12 in automotive air conditioning systems. Available pure or as a blend, R134a also replaces R12 and R500 in chillers and both residential and commercial medium temperature refrigeration applications. R134a has an American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE) safety rating of A1. It has zero ozone depletion potential and a global warming potential of 1430. It uses a polyester oil commonly known as POE.

R410a is a high efficiency refrigerant blend of R32 and R125 that was developed as a replacement for R22, although there is not a retrofit solution available for R22 systems. It is used mainly in residential and commercial air conditioning. The ASHRAE gave R410a a rating of A1 for safety. It has an ozone depletion rating of zero, and its global warming potential is 2100. Like R134a refrigerant, it uses POE oil.

While R134a and R410a are both environmentally conscious hydrochlorofluorocarbon refrigerants, the two are otherwise dissimilar. R134a has a boiling point of -14.9 degrees Fahrenheit, whereas R410 boils at -61.9 degrees. At room temperature R410a has a pressure of nearly 200 psi, while R134a is around 70 psi. As a result, each refrigerant's system requirements are quite different.