



Changing State of Refrigerants – Digest 2014-9

HFO Refrigerants look to be the future for HVACR

What is an HFO?

Hydro-Fluor-Olefins are a new class of refrigerant molecules with no chlorine or carbon atom. Pure HFO refrigerants have zero ozone depletions and have very low global warming potential. Chemical companies around the world are developing both Pure HFO and blended HFO/HFC Refrigerants, for use in a variety of industries and applications.

Since HFO's are mildly flammable, a new A2L safety classification has been adopted. System design, Blend composition and Energy Efficiency will all be balanced against the A2L classification and could have a significant effect on the products that are ultimately made commercially available.

Pure HFO's

HFO R1234YF: Is replacing R134A in automotive AC. Full phase out targeted for 2020*.

*Some automakers are still considering other alternatives, but most have chosen R1234YF

HFO R1234ZD, HFO1234ZE: Are both being adopted as aerosol replacements and possible low pressure refrigerants, replacing R123 and R134A

HFO Refrigerant Blends

HFO/HFC refrigerant Blends are being developed to replace many popular HFC refrigerants. Adoption of these products will depend largely on domestic and international global warming legislation.

R134A Replacements

R444A (Mexichem AC5) is an R134a replacement, similar in capacity and flammability to R1234YF

R445A (Mexichem AC6) is an R134a replacement, similar in capacity with a GPW ~ 130

R450A (Hychill) is an R134a replacement with a GWP ~ 600

R404A Replacements

R448A (Honeywell – Solstice N40) an R404a/R507 replacement with a GWP < 1500

R449A (Dupont - Opteon XP40) a R404a/R507 replacement with a GWP < 1500

R410A Replacement

R446A is an R410A replacement with a GWP < 700

R447A is an R410A replacement with a GWP < 700

All information is preliminary and subject to change.

For more info go to <http://www.rsd.net/refrigerantsuite/index.php> or call 800-245-8007 ex 00405