PASSION DRIVES US

R-454B vs. R-32

The Smart Choice for HVAC Innovation

Explore the Key Differences Driving ICP's Refrigerant Decision

When it comes to choosing the right refrigerant for ducted and ductless residential and light commercial HVAC systems, not all options were created equal. After years of research and development, R-454B became ICP's leading choice for replacing R-410A due to the performance similarities between the two and, ultimately, because it has a lower GWP than R-32.

R454B
A new refrigerant for a better future

But there is another reason to have confidence that R-454B is the smart choice for our products. It also aligns with ICP's commitment to provide our planet and people with a better future by offering the best refrigerant for each application. Read on to discover the similarities and differences between R-454B and R-32.

- **ODP & GWP**
  Both R-454B and R-32 maintain the zero Ozone Depletion Potential (ODP) of R-410A. R-454B does so with 30% less Global Warming Potential (GWP) than R-32, allowing an overall reduction of 75% of the GWP from R-410A.
- **Charge Reduction**
  Both R-454B and R-32 will allow for a similar charge reduction when compared to a R-410A system with similar coil construction. [2,3]
- **Cycle Pressures**
  R-32 operates at a slightly higher pressures than R-410A whereas R-454B operates at slightly lower pressures than R-410A.
- **Glide**
  R-32 is a single constituent refrigerant with no glide. R-454B is a blended refrigerant and has a small glide. While no glide is preferred, our testing2 has shown that the glide present in R-454B has little to no impact on overall system performance.
- **Lubrication**
  ICP R-454B light commercial and residential HVAC equipment will continue to use POE-32 oil, which was also used in legacy R-410A equipment. R-32 HVAC equipment will require a different POE oil approved for use with R-32 refrigerant. In all instances, only use the oil that is specifically directed to be used by the unit manufacturer.

- **Discharge Temperature**
  R-32 has a higher discharge temperature than R-454B. If the temperature of the oil gets too high, the oil can begin to break down and lead to compressor damage or reliability concerns. Therefore, higher discharge temperatures may require additional equipment protections to ensure that the compressor oil does not overheat in hot environments. This means that R-454B has a wider operating envelope in ducted and ductless residential, and light commercial applications.

The bottom line? R-454B stands out as the smart choice, offering a lower GWP, with comparable performance to R-410A, and benefits that outmatch R-32. As the industry evolves, choosing R-454B ensures we're aligning with innovative, sustainable, and reliable solutions.

Don't wait to learn more! Stay ahead of the curve and click here for a printable flyer that explains these key differences between R-454B and R-32.

https://www.ahrinet.org/system/files/2023-06/AHRI_CARB_Compliance_Seminar_Presentation_2-14-20_0.pdf
[2] *https://www.ahrinet.org/system/files/2023-06/AHRI_Low_GWP_AREP_Rpt_052_0.pdf*
[3] *https://www.ahrinet.org/system/files/2023-06/AHRI%20Low-GWP%20AREP-Rpt-022.pdf*

Need A Reality Check?

Are you ready to increase your knowledge when it comes to R-454B? Check out the ICP R-454B Reality Check Video Series featuring Matt Vargo. It's a great resource for finding answers to some of the most common questions regarding the new refrigerant. Like what? Here are just some of the questions Matt discusses:

- *Is R-454B really better for the planet?*
- *Will I still be able to get R-410A?*
- *Can we pair an existing furnace with a new furnace coil and AC/HP?*
- *How flammable R-454B?*
- *What happens if the leak detection sensor fails?*
- *Do I need to reclaim the refrigerant from the outdoor unit?*
- *Do I need special hazardous material signage on my truck?*
- *Is R-454B a drop in replacement for R-410A?*
- *Do I need to reclaim the refrigerant from the outdoor unit?*
- *How different is R-454B from R-410A?*

To view the complete series of R-454B Reality Check videos, log into My Learning Center – mlctraining.com – click on Videos in the far left column, then type "reality check" in the search field at the top of the Video Catalog page.