



*GeoStar is ahead of the industry curve,  
as nearly all of our products are already  
Low GWP Compliant.*

## What is Global Warming Potential (GWP)?

GWP is a measurement of how much a substance contributes to global warming over time. It is used to evaluate a refrigerant's environmental impact. A refrigerant's GWP is determined by comparing its global warming impact relative to the amount of carbon dioxide that would cause an equivalent global warming impact. Refrigerants with low GWP values are more environmentally friendly than those with high GWP values.

## What is R-454B?

R-454B is a new blend of refrigerant which will replace R-410A. It is composed of 68.9% R-32 and 31.1% R-1234yf which have been around for over 10 years.

## Why is the industry making the transition from R-410A to R-454B?

Previous initiatives including the Montreal Protocol (1987) focused on reducing ozone depleting substances. According to the EPA, these initiatives are enabling the recovery of the ozone layer. With those initiatives in place, efforts are now underway to tackle causes of global warming and climate change. Now, the AIM Act (2020) requires HVAC equipment manufacturers to transition away from manufacturing products containing R-410A.

## How do R-410A and R-454B compare in GWP levels?

While R-410A was the refrigerant of choice due to its zero ozone depleting potential, the environmental focus is now on GWP. R-410A has a GWP of 2088. R-454B has a GWP of 466, a 78% reduction vs. R-410A. The current limit is 700.

## Why isn't GeoStar using R-32?

R-32 has a higher GWP (675) than R-454B. With the potential to further reduce GWP levels to a maximum of 500, R-32 would not qualify. In addition, our testing has found that R-454B provides better overall performance. Also, R-454B has been selected as the refrigerant of choice by most major HVAC manufacturers.

## When is GeoStar making this change?

In accordance with regulations, we will no longer be producing geothermal units with R-410A after December 31, 2024. All units manufactured starting January 1, 2025 will contain R-454B. However, there is a "sell through" date that allows the sale (but not manufacturing) of units containing R-410A through 2025.

## What will the phase out of R-410A do to prices for that refrigerant?

Although we can't accurately predict future prices, based on a previous transition from R-22 to R-410A years ago, as mandates to reduce production are implemented over time, costs for R-410A will likely increase significantly.

## Is R-454B safe?

Yes. Although R-454B is classified as mildly flammable, it's considered safe to use when proper safety standards are followed. It's difficult to ignite and has a low flame speed. It is non-toxic and poses little risk to homeowners, service technicians and installers when applied, installed and serviced properly. The allowable concentration is almost 10 times higher than the allowable concentration of propane. The addition of a sensor and other safety devices and functions have been tested and are fully in compliance with regulations.

## What safety devices are included with R-454B units?

A Refrigerant Detection Sensor (RDS) is used in each unit requiring mitigation or selected as an option (if not required). The RDS is connected to a control board to monitor the RDS and determine when a fault condition requiring mitigation has been recognized and is active.

## Will all units have leak sensors included?

All units with 62 oz. or more refrigerant in a circuit are required to have leak detection sensors with the exception of the outdoor split installed outside the home. Some models with under 62 oz. of refrigerant may have sensors as a configurable option.

## What happens when the safety devices detect a leak?

In the unlikely event of a refrigerant leak, the sensor sends a signal to the control board to implement "mitigation". This varies depending on the unit style. Once the level of refrigerant detected by the sensor has been lowered, normal operation of the unit will resume.

## How does performance (capacities and efficiencies) differ?

Performance of units using R-410A vs. the same unit using R-454B are quite similar. Although it varies by model and unit, our testing has found that any differences in capacities and efficiencies are minor.